# THE CHEMIST AND DRUGGIST

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# THE MONTH

THE CHEMIST AND DRUGGIST of this date contains 56 pages varied and useful trade literature.

In as close a space as possible we have given a mass of infortion respecting pharmaceutical, medical, and scientific education. As questions are frequently put to us through the year ich this information would answer, we beg to suggest that number should be kept for reference by those who would be ely to require its assistance.

We have also prepared a very complete *pércis* of the papers d before the British Pharmaceutical Conference at Dublin t month. In our last we gave the President's Address. The litions to pharmaceutical knowledge made by this Conference not inconsiderable. For example, Mr. Draper calls atteution some serious discrepancies between the volumetric tests of Pharmacopœia for ferrous salts and actual results; Mr. resh discusses Soluble Essence of Ginger; Mr. Dott contrites practical notes on Nitrite of Amyl and Beberia; r. Siebold shows a more perfect method of testing quantiively for hydrocyanic acid; miscible copaiba is treated by r. Groves; Mr. Postans suggests an improved preparation of got; Mr. Elkin records experiments which indicate the comrative value of the various official preparations of cinchona; r. Allen treats most exhaustively the methods of distinguishg between carbolic acid, cresylic acid, and creosote; Messrs. Reynolds and Bothamley bring forward some important particulars respecting the pharmacy of Orange-flower Water and Dialysed Iron, and on the latter subject the President (Mr. Schacht) offers some valuable hints. Mr. Fletcher describes a new and probably useful chemical compound of bismuth, iodine, and quinine, and Dr. Symes introduces a new South American medicine, Baycuru, and describes a thermo-regulator. Mr. Greenish brings forward the microscope as an aid to pharmacy, and Mr. Benger discusses some legal aspects of pharmaceutical practice. Other papers on aconite, brucine, opium, and cinchona contain matter of great importance, but are not quite novel.

The Pharmaceutical Council will next month consider whether it is desirable to reappoint a committee to inquire into possible defects of the Pharmacy Act. The languid way in which this duty is undertaken is illustrated by the fact that when the subject was mentioned at the last meeting no one could tell for certain whether the committee had been reappointed. And yet, as we have shown elsewhere, there are about 5,000 unregistered people throughout the kingdom selling medicines containing recognised poisons under cover of the patent medicine stamp, an anomaly which is directly authorised by the Pharmacy Act, and which a little vigour on the part of the council might remove before this time next year.

The arrangements for dental registration are now complete, and persons interested will find all necessary particulars in our first editorial note. Any chemist who can truthfully declare that he was *bonâ fide* engaged in the practice of dentistry previous to July 22 last is entitled to registration. It will cost him 2*l.* if he apply before the end of this year, or 5*l.* afterwards.

We publish this month a full report of the very interesting discussion before the Master of the Rolls respecting Mr. Brandreth's application to register the word "Porous" as a trade-mark in connection with plasters. Messrs. Seabury & Johnson were the chief opponents of this application, and the Master of the Rolls refused it very decidedly.

A notice has appeared in the London *Gazette*, declaring the legality as secondary standards of the fluid drachm and the fluid minim. The latter is stated to weigh ·91146 grain. This is in accordance with the arrangement made by the Board of Trade with the Pharmaceutical Society.

The question respecting pure chloroform prepared from ethylic and from methylic alcohols, still occupies our columns. It is an important matter from a commercial as well as from a medical point of view, and we shall hope to see a satisfactory conclusion fairly arrived at before it is dropped.

Our "Corner for Students" this month reveals the important fact that lead is an almost invariable impurity in commercial subnitrate of bismuth. This subject has attracted considerable attention among continental chemists, and though we believe the quantity contained varies very considerably, from a mere trace to an almost dangerous proportion, it is an impurity which should not be ignored.

We regret to observe in the reports of the calamitous wreck on the Thames, which have so thrilled the country, that several names with which our readers will be familiar are among the list of the lost. Mr. Kidston, the shop-fitter, lost his wife and a daughter, he and a son escaping. The widow and a daughter of the late Mr. Bartlett Hooper, chemist, of King William Street, were also drowned. A Mr. Jingle and his wife, of the Apothecaries' Hall, were saved.

The discussion respecting "pure" or "methylated" chloroform still continues. It is a matter of commercial importance that all pharmaceutists should be acquainted with the facts involved.

# CORNER FOR STUDENTS.

Conducted by Richard J. Moss, F.C.S.

THE subject of the next exercise in qualitative analysis will be one of the chemical compounds of the Pharmacopœia. The substance is to be submitted to a systematic qualitative analysis, its composition and name ascertained, and a report made as to its purity.

Students who wish to compete should send us their names and addresses before the 20th inst. Samples of the substance for analysis will be forwarded on the 25th inst.

Students' reports will be received up to October 15.

## Answers.

*Bismuthi subnitras*, B.P., was the subject of the last exercise; it was a specimen of the ordinary commercial article, although it contained lead, with traces of iron and calcium, and the hydrochloric and sulphuric radicals.

Bismuth is of comparatively rare occurrence in nature, but its many interesting applications have raised it to a position of importance amongst the metals. It is found principally in the native state, and is extracted from the matrix simply by heating the ore in an inclined metal tube, so that the fused bismuth runs off and is collected in suitable vessels. This rough method is not calculated to yield a very pure article: the product generally contains arsenic, iron, nickel, copper, or lead. From most of these it is separated by dissolving it in nitric acid, and precipitating the basic nitrate by the addition of water; the salt is then reduced by heating it with charcoal and alkaline carbonates. Bismuth is one of the few substances which, like water, possess a greater density in the liquid than in the solid state. In many other respects its properties are remarkable. Although it is extremely brittle it may with care be hammered out to a very perceptible extent. When subjected to great pressure, instead of becoming more dense, as one would expect, it acquires a lower specific gravity. The chemical properties of bismuth place it in the same group with antimony, but electrically the two metals differ so widely that they form in conjunction a very powerful thermo-electric couple. Faraday showed that all substances are either attracted or repelled by a powerful electro-magnet. Those that are attracted are called paramagnetic, and those that are repelled diamagnetic. Iron is the most conspicuous of the paramagnetic bodies, while bismuth is the most powerfully diamagnetic of all known substances. Bismuth melts at about 260° C., but a mixture of 2 parts of bismuth, 1 of lead, and 1 of tin, called "fusible metal," melts at so low a temperature as 94° C. This alloy expands slightly in cooling, like type metal—hence it is used for taking sharp impressions of dies. A similar fusible alloy of bismuth is employed for making safety plugs for steam boilers, the intention being that the plug should melt when the temperature of the steam exceeds certain limits. By replacing about half the tin in this alloy with cadmium, a still more fusible mixture is obtained, melting at about 70° C. This is used for stopping teeth. Some of the compounds of bismuth have a limited application in porcelain painting and glass staining, as well as in medicine. The subject of our exercise, also known as *Magisterium bismuthi*, is occasionally employed as a cosmetic under the name of *Blanc de fard*. The oxychloride is known technically as "pearl white."

The chief impurity in the subject of our exercise was lead. It was present, probably, as nitrate, for it was almost all found in the portion dissolved by water. In a liquid containing much bismuth, the production of a precipitate by sulphuric acid cannot be taken as evidence of the presence of lead, as bismuth also, if present in sufficient quantity, yields a precipitate with this reagent. On evaporation to dryness the bismuth sulphate is easily dissolved by dilute sulphuric acid, while lead sulphate is unaffected by it. The chromate of bismuth may readily be mistaken for that of lead; so that in the presence of the former metal the student must not fail to ascertain the behaviour of the yellow precipitate with dilute nitric acid and with potassium hydrate. Several students omitted the examination for ammonia altogether; a little of the powder mixed with calcium hydrate and moistened with water yielded enough ammonia to admit of its being detected by smell; of course with turmeric or red litmus paper the reaction was very well marked.

## Prizes.

The First Prize for the best analysis has been awarded to Henry Sieberg, 118 West Street, Glasgow.

The Second Prize has been awarded to Leonard Dobbin, 45 North Street, Belfast.

### *Marks Awarded for Analyses.*

| | |
|---|---|
| H. Sieberg (1st prize) | 90 |
| L. Dobbin (2nd prize) | 88 |
| T. G. Nicholson | 85 |
| Indoctus | 75 |
| J. D. Turney | 70 |
| J. F. Croshaw | 65 |
| Cyprus | 65 |
| J. P. Harold | 60 |
| A. Ogden | 60 |
| J. Garrett | 60 |
| T. H. Elvin | 55 |
| Capella | 55 |
| Exon | 50 |

## TO CORRESPONDENTS.

*Prizes.*—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as second prize.

⁂ All Communications should include the names and addresses of the writers.

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*T. G. Nicholson.*—The powder was completely soluble in dilute hydrochloric acid, and therefore could not have contained sulphuric acid as salt of barium. The trace of sulphuric acid present was most likely in combination with lead; lead sulphate is not nearly so insoluble as barium sulphate.

*Indoctus.*—If you adopt the plan of stating your results in the tabula form shown in "Attfield's Chemistry," or in almost any handbook analysis, you will find it much more convenient than the straggling arrangement which you follow.

*J. D. Turney.*—You state, "No portion soluble in water." This was far from the truth: water dissolved a very appreciable portion, including nearly all the lead that was present.

*J. F. Croshaw.*—Traces of impurities were overlooked by you; if your plan of working only refers to considerable quantities, you had better reform it.

*Cyprus.*—There was no difficulty in detecting lead; it was present in qui a large quantity for an impurity. Your examination was not sufficiently systematic, magnesium, potassium, sodium, and ammonium being omitted altogether, as well as most of the acid radicals. The plan followed ought to be applicable to any mixture of the ordinary metallic and acid radicals.

*J. P. Harold.*—Whatever difficulty there was in detecting traces of metal there was certainly none in detecting chlorine, its reactions are so characteristic and so well marked. A nitric acid solution of the powder gave an immediate cloudiness with silver nitrate.

*N. Ogden.*—There can be little doubt that your supposed mercury was bismuth, but the globules must have been evolved out of your inner consciousness. When you detected nitric acid you were evidently satisfied, and thought no more of acids; you must not be so easily satisfied with your work.

*J. Garrett.*—There was nothing in your paper in support of the stateme that there was an excess of nitric acid in the powder.

*T. H. Elvin.*—You made an important omission. You forgot to say wh conclusion you had arrived at. Can you not manage to make a more complete analysis, showing not only that certain substances are present, but that all others are absent?

*Capella.*—The solubility of the substance in warm dilute hydrochlori acid is anything but proof of the absence of lead. Try how lead chlorid behaves under the circumstances. You might have ventured to name t substance.

*Exon.*—Next time, before you send us your paper ask yourself is it the most complete and exhaustive that you can prepare. If you are compelled to answer in the negative, you had better keep your paper and try again.

## Pharmacalia.

ATION time has ceased, and once more the serious duties of iness and student life commence. One of the strangest ts which fashion can produce is that of London at the West- during the annual pleasure-seeking emigration. Had any ur friends from the provinces visited Hyde Park during the t month they might have fancied themselves in their own et home, remote from the intrusion of the world. The soli- e has been more complete than ever, and pharmacy has felt influence. The Historic House is, perhaps, the one that ers most when the rush of June is ended and the fever of y has subsided. As if by enchantment—suddenly—and with note of warning, all is stagnation. The master wisely disap- rs. He has gone, possibly, to Dublin, to the British Pharma- tical Conference; or he is feeling most uneasy in the captive loon at the Trocadéro. The head assistant is engaged in ng life at Margate, while the juniors wait till their turn ll come and free them from the weariness of doing nothing. the last duchess has taken her last pill, and the last lady's d has discovered that madame wants more scents. Not se, gentle reader: let us speak kindly of the upper orders. truth, there does come a time, though literary paragraphs y the fact, when the tide of London business is at a remark- y low-water mark. Wait two months and the great hive be refilled. Meanwhile another form of activity has sprung all around us—the fresh and vigorous life of the student. has come to the great centre to be taught how to learn, and many admirable schools are ready to bid him welcome. Our rt goes with him in his new career. Speaking from long erience, we should say, "Use books much, but your own ds more." The hand without the book will be very clumsy, the book without the hand is a dead letter. In other ds, let the habit of practical experiment and ex- nation be cultivated to the utmost in every branch the study of pharmacy. At no previous time could young pharmacist have come to London under happier pices. He has there an opportunity of acquiring the ry and science of his art in a way which we believe to nrivalled. The fine educational establishments now founded h the direct design of explaining chemistry in its varied plications will bear comparison with any similar institutions the Continent. On both sides of the Thames, in different lities, under varying systems, but with a common aim, in ial schools or in courses forming part of other college work, mysteries of all the knowledge valuable to the chemist and ggist are revealed. The desire for information, which is of the healthiest signs of the present day, has been met iently; and we may hand over with confidence the most d as well as the most ambitious student to the care of his ructors.

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e are unable to congratulate the editor of the *Pharmacist* icago) upon the character of his special foreign correspon- ce. It is doubtful whether "the series of letters promised ur Professor Garrison, of the Chair of Materia Medica," are ly to increase the reputation of the journal in which they ear. The Americans are usually keen observers, and some he very best disquisitions on things pharmaceutical have e from New York, Philadelphia, and the city from which curious correspondence dates.

e pretend to be fairly acquainted with London, and believe be the place indicated by Professor Garrison, who has de- ed nearly six weeks to the investigation of this city in its ious aspects. Possibly some other place was visited by take, for we cannot make the descriptions tally. Chemists' shops are said almost never to occupy corner stores in the metropolis—the counters are mere boxes, the bottles are ill-shaped, and always adorned by paper labels; the windows never contain any of "our" beautiful pear or pine-apple show-bottles, and, so far as he has seen, the display of toilet goods is usually very limited. He recognised a large number of American nostrums on the shelves, which, it is said, enjoy a large patronage. This is due, no doubt, remarks the modest cultivator of science, to the belief that pervades all classes, from princes to peasants, that the Americans are the smartest, or, as the colloquial phrase here is, the cleverest of living people.

We suppose this belongs to the humorous vein for which the editor says the Professor is noted, and which is sure to become more and more developed. Let us not anticipate the worst. Should he hereafter have another six weeks at leisure he might profitably devote them to some general acquaintance with his subject, at all events he would have an opportunity of learning that the *Royal* Pharmaceutical Society, of which he makes mention, is unknown to his English readers.

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Reading Mr. Estcourt's short paper on the analysis of beer, we were reminded of an incident now well-nigh forgotten, which was called the strychnia panic. In the year 1852 a foolish report was spread that both Messrs. Bass and Allsop adulterated their renowned beverages with the alkaloid in question.

It was stated that a large quantity of strychnia had been sent from France to England, and this led to a variety of speculation as to what purpose it had been applied. The absurd rumour gained such credence, that a detailed report was furnished by Professors Graham and Hofmann to contradict the statement. The two great brewers invited the general public to visit their establishments, and both courted the strictest investigation. The large importation of the poison turned out to be only about 50 ounces, while not less than 30,000 ounces would have been required to contaminate the quantity of bitter beer annually supplied. The data required for analysis, as stated by Mr. Estcourt, are:—The original gravity (which also gives in the specific of the extract the percentage of solid matter), the total ash, the sodium chloride, the phosphoric acid, and the ammonia produced when the beer is submitted to Wanklyn's process.

In the year already mentioned two assistants were standing behind the counter when an Italian lady made her appearance with a bottle of Bass's pale ale. It came from a noted Scotch house, to doubt the reputation of which would have been high treason. But the *Times* paper had declared that half a gallon of the compound (if it had been correctly informed) might be fatal to the human health—which was, indeed, true. So could the suspected liquid be properly examined? The two assistants, both of whom survive, were willing to undertake the task, and though pharmacists, were yet fallible men; also it was one o'clock P.M., the hour of luncheon. The Bass was practically examined, and a request was forwarded that half a dozen more would be desirable to complete the investigation. Three days elapsed, during which the physiological effects, rather than the chemical constituents, of the fluid were determined. There were neither rabbits, nor yet little dogs upon the premises, consequently the two assistants sacrificed themselves upon the altar of original research. All would have gone well had not a further supply of the deleterious beverage been suggested with a view to confirmatory tests. The lady came, and smiled. She was fair to look upon and not vindictive, and she said, in her choicest English—"Gentlemen, I see that neither of you are yet corpses, and I am quite satisfied with the result."

# The Pharmaceutical Council.

ONLY eleven members of the Council presented themselves at the September meeting on the 4th inst. These were the President and Vice-President (Messrs. Williams and Savage), Messrs. Atkins, Bottle, Gostling, Greenish, Hampson, Hills, Robbins, Shaw, and Woolley. These gentlemen occupied themselves with a discussion as to the reason why a larger number of examinees always fail on the last day of an examination than on the first. It was generally supposed that this is due to the least prepared expressly requesting that they might be called last.

On the motion of the President, it was resolved to put the Irish Pharmaceutical Society on the free list. That is a little reward to the Irish druggists for being so kind to the English delegates lately.

There was some little confusion as to whether the committee appointed last year to consider any possible amendments in the Pharmacy Act had been re-appointed. Mr. Greenish thought it had, but no minute of such appointment could be found. Mr. Bottle will next month move the appointment of a special committee.

# The Pharmaceutical Society of Ireland.

THE monthly meeting of the Council of the above Society was held at the College of Physicians, Kildare Street, Dublin, on Wednesday, September 4; Dr. Aquilla Smith, Vice-President, in the chair. The following were present:—Mr. Allen, Mr. Bennett, Mr. Brunker, Dr. Collins, Mr. Hayes, Mr. Holmes, Mr. Oldham, and Sir G. B. Owens.

A letter from the editor of THE CHEMIST AND DRUGGIST journal to the president was read. After some conversation Mr. Holmes stated his intention of handing in a notice of motion in reference to it, to be considered at the next meeting of the Council.

Dr. Collins (on behalf of a committee appointed to get counsel's opinion on several questions relating to the powers of the Council under the Pharmacy Act) read the opinions given. It was resolved that the opinions be printed and circulated among members of the Council.* The other business was of a routine character.

## CHEMISTS' ASSISTANTS' ASSOCIATION.

ON Wednesday, August 7, Mr. Wallis, president, in the chair, Mr. C. B. Miller read a paper "On Digestion." This paper thoroughly entered into the subject of the economical value of foods, and their changes and absorption in the digestive system. It was followed by a lively discussion, after which a vote of thanks was passed to the author.

At the meeting on September 4 the president announced the following donations towards the expenses attending the removal of the Association to new and permanent quarters:—

| | £ | *s.* | *d.* |
|---|---|---|---|
| Messrs. S. Maw, Son & Thompson .. .. .. .. | 5 | 5 | 0 |
| ,, Burgoyne, Burbidge & Co. .. .. .. .. | 2 | 2 | 0 |
| ,, A. S. Hill & Son .. .. .. .. .. | 1 | 1 | 0 |
| ,, Evans, Lescher & Evans .. .. .. .. | 1 | 1 | 0 |
| ,, Allen & Hanburys .. .. .. .. .. | 1 | 1 | 0 |

and promises of some others,

# Provincial Reports.

## BIRMINGHAM.

A PAUPER LAUDANUM DRINKER. MORE MAGISTERIAL ADVICE TO CHEMISTS.—Under an Act of Parliament a fine of 20*l.*, or two months' imprisonment, may be inflicted on any person taking spirits or similar articles to workhouse inmates without permission from the authorities. Under this Act a servant-maid, named Mary Ann Cooper, was prosecuted at Birmingham for taking a supply of laudanum to her mother, who resided in the workhouse infirmary, and was a confirmed opium eater. This lady threatened to leave the workhouse and depend for her support on her daughter, unless she was supplied with whisky, laudanum, and tobacco. The daughter was not in a position to support her, and on this compulsion, and after a warning from the master, took her mother, on August 7, a bottle containing 9 ounces of laudanum. This had been purchased from Mr. Robinson, Snow Hill, who was examined on the second day of the case, when the following episode occurred:—Mr. Robinson admitted that the 9 ounces of laudanum taken into the workhouse were purchased from his shop. He said the prisoner's mother had for many years purchased laudanum at his shop, and, knowing her to be a regular customer, he had a perfect right to supply her with the opiate. The Act of Parliament did not require him to obtain signatures before supplying persons with laudanum who he knew constantly made use o it. Mr. Lowe (a magistrate): But should you supply it without any caution? Mr. Robinson: We have supplied the prisoner's mother with gallons of laudanum. She takes it regularly. Mr. Lowe: Did you supply this knowing that i would be given to the prisoner's mother? Mr. Robinson: Yes, sir. Mr. Hebbert (clerk): Then you ought to be punished! Mr. Lowe afterwards remarked that, although within the limits of the law, it appeared to him to be a very dangerous practice to supply large quantities of laudanum to persons for private use, and he hoped chemists would take warning from the present case. The prisoner was discharged on the ground of her ignorance of the law, her poverty, and the reluctance of the authorities to press the case, which was said to have been brought forward simply as a warning to other offenders. So the workhouse authorities have on their hands a confirmed opium eater, who places them in this dilemma: either they must themselves supply her with laudanum, or they must see her die for want of it.

DOGBERRY.—On Thursday, August 15 (according to the *Birmingham Post*), an "intelligent officer," whose name is Ordgridge, found in Digbeth a man who said he had taken poison, and who actually held in his hand a bottle which had contained laudanum, and was labelled "poison." Conscious that it is an offence to attempt to commit suicide, the policeman promptly took the man into custody; but not, seemingly, being aware that to take poison is dangerous as well as unlawful, he conveyed his prisoner, not to a surgeon, but to Alcester Street Police Station. There he was kept for twenty minutes—quite time enough for a fatal result—and then, on the instructions of a sergeant, the would-be suicide was solemnly conducted to the lock-up at Moor Street; still no doctor being called in. On the arrival at Moor Street the inspector there inquired if medical advice had been obtained, and on being told that it had not, another journey was ordered, and the unhappy prisoner was despatched to the Queen's Hospital, where he was detained and properly treated. Seeing that the man had taken laudanum, all this marching about might have helped to keep him falling into insensibility, though the police had evidently no idea that they were applying remedial treatment. We may, however, point out that the peripatetic treatment is not applicable to all cases of poisoning, and that some day a patient may die under it, which will be awkward for those who may happen to be responsible.

## CHORLEY.

UNLICENSED SALE OF PATENT MEDICINES.—At the Chorley petty sessions on September 3 James Hood, of Adlington, Ephraim Pilkington, of Brinscall, James Blackburn, Stump Lane, and Matthew Pilkington were summoned for exposing for sale certain medicines liable to stamp duty without having taken out a license.—Mr. J. Stanton defended.—Mr. W. Kelly, excise officer, deposed to purchasing at Hood's shop a box of Fenning's cooling powders, for which he paid 10*d.* Similar offences were proved in the other cases.—Mr. Dewse, supervisor, said this was the first prosecution of the kind in this district, and it arose through the receipt of an anonymous letter to a high official, complaining that patent medicines were sold in the neighbourhood of Chorley by persons who had not taken out the necessary license. An investigation was instituted, and Mr. Kelly made purchases at several shops. The penalty was 20*l.*, the Bench only having power to mitigate to one-fourth.—In reply to the Bench, Mr. Dewse said that proprietary mediines could not be sold without a stamped label, and a person ·ho sold such medicines had to take out a vendor's license, ·hich cost 5*s.* per annum.—The Chairman: What kind of rugs would not come under that definition?—Mr. Dewse: Iany kinds of drugs and pills.—The Chairman: Mention some. -Mr. Dewse said that any proprietary medicine that was ad- ertised for sale for the cure of certain specified diseases was iable to the tax; exceptions being made in the cases of com- ounders of physicians' prescriptions.—Mr. Dewse, in reply to Ir. Smethurst, said that seidlitz powders or rhubarb and ntibilious pills sold as such were not patent medicines. They ere merely labelled as such.—Mr. Rigby supposed the people ho sold the patent medicines knew nothing about it.—Mr. ewse did not say they did, but it was presumed that all men new the law.—Mr. J. Stanton pleaded in mitigation of the ne, remarking that his client was quite ignorant of having ommitted an offence.—The defendants were each fined 5*l.*, the ench recommending that the Commissioners of Inland evenue reduce the amount to 1*s.*

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* We shall probably be able to publish these opinions next month, but we learn that the counsel to whom questions were submitted was decidedly of opinion that all the shareholders in a co-operative or limited liability concern carrying on the practice of pharmacy must be registered chemists.

## CARDIFF.

Fire at a Druggist's.—A fire occurred on August 24 on the remises of Mr. Kenrick, chemist and druggist, Duke Street, ardiff. It was caused by the ignition of "blue fire." It was f small dimension, and caused but little damage.

## DOVER.

The usual quarterly meeting of the Dover Chemists' Associa- on was held on August 14. Mr. H. Peake presided, in the bsence of the Chairman. A report was presented by the ecretary, from which it appeared that during the past quarter n attempt had been made to form an Assistants' Association, hich failed mainly through the apathy of those whom it was roposed to benefit. As a result of the petition which the ssociation had sent to Parliament a letter had been received rom Colonel Freshfield, M.P. for the borough, who said: "I ave this day presented your petition against the Medical Act mendment Bill, which has come from the House of Lords. I ave also given notice to insert the substance of Clause 28 in he Act of 1815 in the Bill as a new and additional clause. I m afraid that the Government will not accept the amendment, ut they ought, and I will do what I can towards it."

The report concluded by recommending that appropriate ction be taken at a fitting opportunity.

After the report had been adopted, the Secretary (Mr. Brown) aid there were two points on which he felt somewhat strongly, the rst being the denial given to the Duke of Richmond by the harmaceutical deputation that any instances of oppressive rosecution existed. Viewed in the light of the verdict given n Wiggins' case, viz., "That the defendant acted as an apothe- ary in taking cases that were dangerous," it was fair to assume at Mr. Shepperley, in prescribing for a paid informer, who igned an ailment for the purpose of getting up a case, was rongfully convicted. It was unfair and unjust to allow this iew to be overborne by secret and informal accusations against he defendant of having otherwise transgressed the limits ommonly observed, and he regretted that the deputation were pparently biased to the extent of giving an obviously inaccu- ate reply.

Again, the original total repeal of the 20th section of the pothecaries Act met apparently with the tacit approval of the ouncil, and indeed the editor of the journal had emptied the ials of his wrath upon the unfortunate Trade Association for rectly bringing about a correction of this "inadvertence." o that, seemingly, an alteration of the law would, if attained urreptitiously, have been welcomed by the same body, who yet fused openly to ask for it; this was conduct hardly worthy f an ancient, dignified, and wealthy corporation.

It was resolved that a donation of a guinea from the funds in and should be sent to the Special Defence Fund of the Trade ssociation, and the proceedings terminated.

## DUBLIN.

An inquest was held on August 26, on the body of Frederick ampbell, late a clerk in the establishment of Messrs. Hunt & o., druggists, Westland Row. The deceased had recently lost s wife, and had consequently suffered much depression. On e 23rd he went to business as usual, and left the establish- ent about a quarter to eleven. About one he was found lying pparently drunk near the docks. A car-driver, with some policemen, picked him up and drove him to the Baggott Street Hospital. The attendants, regarding the case as one of mere drunkenness, and being full, sent him on to the St. Patrick Dun's Hospital, where he was carefully treated, but died in about an hour. The man stated that he had taken about a drachm of strychnine. A verdict finding temporary insanity was returned, and, in consequence of some excitement on the subject, the jury severely investigated the conduct of the officials at the Baggott Street Hospital, but ultimately exonerated them from all blame.

## DURHAM.

Are Unregistered Druggists Outlaws?—At the Durham County Court on August 19, before Mr. E. J. Moynell, judge, an action was brought by James Walker, grocer and druggist, Wheatley Hill, to recover the sum of 1*l.* 19*s.* 9*d.* from William Brown, miner, of the same place, for goods sold and delivered.—His Honour, after looking at the bill of particulars, observed that most of the items in the account were for tincture of myrrh, and asked the plaintiff why he had supplied such large quantities.—The plaintiff replied that the defendant's wife was suffering from bad breasts, and he ordered the tincture of myrrh to be used as a remedy. In further answer to his Honour, plaintiff admitted that he was a druggist and dealer in patent medicines, but that he was not registered.—His Honour said the plaintiff could not recover because he was not registered under the Apothecaries Act; neither could he charge for advice, because he was not a duly qualified practitioner or even registered as a druggist.—The defendant's wife was called, and said that she consulted the plaintiff about her breasts, and after examining them he prescribed the tincture of myrrh as a remedy. She persevered in applying it for a long time, but it did her no good, and she again consulted the plaintiff. The plaintiff then admitted that he knew the tincture of myrrh would do her no good, as she was suffering from cancer, and pleaded that he did not like to tell her so when she first applied to him.—His Honour non-suited the plaintiff.

The foregoing report describes such a curious muddle in the mind of the judge that we give it with all reserve. The man had broken the Pharmacy Act by calling himself a druggist, and a jury might perhaps find that he had broken the Apothecaries Act also by advising. What he stated in his own defence was, however, worse than all his other crimes. But he had a clear legal right to the price of his tincture of myrrh, which, it appears, was all he sued for.

## GLASGOW.

The *Glasgow Herald* is informed that under the settlement of the late Mr. Archibald Mackinlay, chemical manufacturer, Musselburgh, the residue of his estate is bequeathed to the Old Man's Friend Society. It is estimated the amount will be about 10,000*l.*

## LINCOLN.

The children connected with the Catholic Schools of this city were all invited on August 22 to Bracebridge Park, the residence of F. J. Clarke, Esq., of "Blood Mixture" fame. After games of cricket, racing, &c., a good tea was provided in a marquee, Mrs. Clarke superintending the arrangements. Tea over, Mr. and Mrs. Clarke commenced to distribute nuts and sweets, which brought the happy day to a close. A fresh surprise, however, awaited the children, for on the following morning Mrs. Clarke appeared in the schoolroom and presented them with about 100 books.

## LUTON.

Respect for the Pharmacy Act.—At an inquest held here on August 21, it appeared that a young woman had committed suicide by drinking a solution of oxalic acid. The poison had been purchased of a Mr. G. H. Chambers, oilman and drysalter, and was supplied in a waste envelope. The evidence as to the manner in which large quantities of oxalic acid are distributed about Luton is sufficiently remarkable for quotation:—

> Mr. G. H. Chambers, oilman and drysalter, Market Hill, recognised the envelope produced as that of an invoice received by him, from the date on Monday evening. It was their custom to cut open envelopes and put them on the counter for use as waste paper. On Monday they sold about 3 cwt. of oxalic acid, and 1½ to 2 cwt. on Tuesday. Did not recollect selling any in a paper like that, but it might be done by one of his men. Observed white grains in the paper. Saw in it an oxalic acid crystal. After tasting a grain he said it was undoubtedly that acid. They sold on an average 30 or 40 pennyworths a day. The envelope would hold a

pennyworth. They always used a red label with "poison" printed on it.

Mr. J. J. Chambers, brother of the last witness, said he did not sell any acid in the envelope produced. When asked for a pennyworth of oxalic acid, they put it into any paper at hand suitable for the purpose. As a rule they labelled or wrote poison on the paper, but not invariably. Large parcels they did not generally label poison.

There were two registered chemists on the jury, and these acquiesced in a verdict which "recommended" that all packets of oxalic acid should be labelled "poison." Could not these gentlemen have enlightened their fellow jurymen with the information that the law does something more than "recommend" this proceeding, and objects to a mere "oilman and drysalter" dealing in oxalic acid at all?

## MANCHESTER.

**Embezzlement by a Dispensary Collector.**—On August 17, at the Manchester City Police Court, George Enoch Jones was committed for trial on the charge of embezzling *5s. 10d.* and various other moneys belonging to the Provident Dispensary, Ardwick Green. He was employed at the dispensary as collector, his remuneration being 18*s.* a week, 10 per cent. commission, and furnished apartments. It was alleged that he had received the monthly contributions of certain subscribers and had not accounted for them. Recently he removed to London in company with a certain barmaid, but had been tracked by a detective.

## NORTHAMPTON.

**Mr. John Hughes**, of the York Glass Bottle Company, is a candidate in the Liberal interest for the representation of the Borough of Nottingham. Mr. Ayrton, Mr. Bradlaugh, and a few other notabilities, are also suggesting themselves.

## SHEFFIELD.

**The Successor of the late Mr. William Baker.**—Mr. Henry S. Bell, F.C.S., has succeeded to the business of the late Mr. Wm. Baker, analytical chemist, whose death caused such wide-spread sorrow in Sheffield and district. Mr. Bell has had experience in Greece, Colorado, and other parts of the world.

## STAFFORD.

An exhibition of sanitary appliances and articles of domestic use and economy, held in connection with the Autumn Congress of the Sanitary Institute of Great Britain, will take place here from October 2 to October 19 next.

## WIRKSWORTH.

**Patent Medicine Prosecution.**—At the Wirksworth Petty Sessions, on August 20, Mrs. Ann Gratton, widow, of Bonsall, was summoned for selling a certain patent medicine, known as "Mother Siegel's Medicine," without having a license so to do. Mr. E. Scott, excise officer at Wirksworth, deposed to seeing the medicine exposed for sale in Mrs. Gratton's shop window, and to purchasing some of it on July 13 last. He further said defendant told him the proprietors had informed her she must take out a license and they would pay for it, but she had not had time to do so. She now pleaded ignorance of the law, but the magistrates imposed the mitigated penalty of *5l.* and costs, and recommended the fine should be further reduced on the ground of poverty.

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**The Swiss Society of Pharmaciens** held its annual assembly at Zurich on August 27, 28, and 29. There is a cheerful sort of tone about the programme which makes it worth quoting:—"Tuesday, August 27.—6 P.M. Reception and Social Réunion at the Hotel National. Wednesday, August 28.—8.30 A.M. Session in the College Hall. 11–12. Pause at the Café St. Gothard. 12. Session again. 2 P.M. Dinner at the Abbaye de la Balance. 5 P.M. (3 hours for dinner). Visits to the Polytechnic, the Observatory, and the Collections of Antiquities. 8 P.M. Supper offered by the pharmaciens of Zurich at the "Sihlhoelzi." Thursday, August 29.—7.30 A.M. Meeting at the Balance Hall and visit to the Botanic Garden and the Musée des Arts et Métiers. 10 A.M. Drive to Uetliberg. 11 A.M. Session at Ulo-Kulm. 2 P.M. Closing banquet on the Uetliberg, and promenades. 7 P.M. Return to Zurich, and social réunion at the Zouhalle." Surely this is pharmacy made easy.

# The British Pharmaceutical Conference.

LAST month we reported the opening of the fifteenth session of the British Pharmaceutical Conference at Dublin, and we then printed the address delivered by the president Mr. G. F. Schacht. We shall now complete our report of the proceedings, though it will be necessary for us to condense the various sections of our notice as far as may be consistent with clearness.

### The Report of the Executive Committee

Testified to continued prosperity, and made special allusion to the hearty efforts which had been put forth by the Irish Committee to ensure the success of this first meeting of the Conference in Ireland. The Committee regarded with pleasant anticipations the prospect of obtaining fresh workers in this new field.

The Committee had sold out the Russian bonds in which the Bell-Hills Fund was invested, and had purchased Consols with the proceeds, transferring from the General Fund such a sum as was necessary to ensure an annual income of ten pounds. Mr. Thomas Hanbury had presented in memory of his late brother thirty copies each of Mr. Daniel Hanbury's works, Pharmacographia and Science Papers, one of each to be presented to the libraries of each of the towns which the Conference had already visited, or should visit, until the gift was exhausted. Copies had been presented in accordance with this offer to the Pharmaceutical Associations of Bath, Birmingham, Nottingham, Exeter, Liverpool, Edinburgh, Brighton, Bradford, London, Bristol, Glasgow, and Plymouth, and had been heartily acknowledged.

Mr. Louis Siebold had been re-appointed editor of the *Pharmaceutical Year Book* on certain conditions as to the date on which the work should be completed. Dr. Alfred Senier had been appointed assistant secretary at a salary of 40*l.* per annum.

Early in the present year, a revised edition of the "Blue List" of subjects suggested for investigation had been issued to members. This list included only subjects possessing more or less special pharmaceutical interest: it being considered desirable to encourage as much as possible the presentation of papers bearing closely on Pharmacy. The Conference had hitherto been very largely indebted to scientific men, other than pharmacists, for communications of great value, and the Committee recognised how much the Conference had gained in position and influence by the sympathetic aid thus accorded. Whilst expressing the hope that in future years the Conference might still be honoured by such communications, the Committee could not too strongly urge on members generally the necessity existing for a decided effort to maintain or increase the number and importance of contributions on pharmaceutical matters.

The following grants in aid of research had been voted during the year:—

Five pounds to Mr. Shenstone, to aid in the examination of the alkaloids of false angostura bark: 20*l.* to the Committee (Messrs. Groves, Williams & Wright) appointed to investigate the aconitines.

The report having been adopted, Professor Attfield announced that the books to be presented to the Library of the Irish Pharmaceutical Society had been selected and were then being bound.

Professor Tichborne returned thanks on behalf of the Society.

### Report of the Committee on the Aconite Alkaloids.

The committee who had first undertaken the investigation of this subject had been Dr. Wright, Mr. J. Williams, and Mr. T. B. Groves. The work now reported, it was stated, was to be credited solely to Dr. Wright and his coadjutor, Mr. A. P. Luff. Their results have to a great extent been already read before the Chemical Society, and in The Chemist and Druggist of June last we give a summary of their communication as far as it was pharmaceutically interesting. The authors recommend tartaric in place of sulphuric acid for the exhaustion of the aconite roots, and they claim that by forming salts with the alkaloids a perfectly definite series of preparations of aconitine can be obtained. Aconitine by saponification separates into euzoic acid and aconine, and pseudaconitine (the alkaloid of *l. Ferox*) separates into dimethylproto-catechuic acid and pseudaonine. The authors had also worked on several samples of apanese aconite, respecting the alkaloids of which Messrs. Paul Kingzett had reported last year. Contrary to the statement f the latter chemists, this alkaloid had been found to yield asily crystallisable salts. Its chemical composition was not, in he opinion of the authors, what Messrs. Paul & Kingzett had ttributed to it. The alkaloid was distinct from pseudaconitine nd from aconitine, but it nearly resembled the latter.

Mr. **Groves** expressed his satisfaction at seeing the prospect of a series of efinite crystallised aconite salts. At present both aconites and aconitines aried to such an extent as to make their employment almost impossible.

Mr. **Williams** said that a fairly pure aconitine was to be had, but the ommercial article was generally a mixture of alkaloids. It was to some xtent a question of price.

Dr. **Paul** criticised the conclusions of the report rather severely. He marked that the formulæ now given differed from what had formerly een quoted, and he thought these had been arrived at without sufficient vidence.

Professor **Attfield** pointed out that Dr. Wright had arrived at these ater results by analysing the pure alkaloids, and he thought chemists ught to be grateful to him for correcting his earlier analyses.

Mr. W. A. **Shenstone**, F.I.C., presented a report on

## BRUCIA AND THE CONSTITUENTS OF STRYCHNOS BARK.

he details of this report had been brought before the Pharmaeutical Society last January and February. The chief points vere that commercial brucia always contains strychnia, the proortion varying from ·25 to 1·05. It can, however, be purified, nd the reporter proposes as the best method to crystallise the rucia from boiling water to which some acetic acid has been dded.

An examination of the false Angostura bark had shown that his bark does contain strychnia, but in small quantity.

## THE VOLUMETRIC ESTIMATION OF SOME IRON COMPOUNDS OF THE PHARMACOPŒIA.

*By H. N. Draper, F.C.S.*

The author said he brought forward his notes rather as queries han as results. Professor Tichborne had questioned to him he correctness of the figures given by the British Pharmacopœia n the volumetric estimation of arseniate of iron. The quantity f bichromate solution said to be necessary for the conversion of grammes of ferrous arseniate seemed to Professor Tichborne oo small. According to the British Pharmacopœia 100 cc. of he solution are capable of converting from proto to per salt ·68 gramme of iron. This statement is theoretically correct, nd Mr. Draper found by actual experiment, taking the mean f three made with piano wire, that the actual quantity required vas 97 cc.

Now regarding arseniate of iron, the Pharmacopœia states hat 2 grammes require 17 cc. This is because the iron is in a "partially oxidised" condition. If it were possible to prepare he arseniate so that all the iron should be in a ferrous state he conversion would require 44·84 cc. This shows that the British Pharmacopœia standard is that of a salt containing only 7·9 per cent. of absolute ferrous arseniate, a constitution which is but inadequately described by the phrase "partially xidised." But on making the arseniate according to the Pharmacopœia instructions even this proportion of ferrous rseniate was not realised. The mean of three experiments gave nly 21·7 per cent. Other specimens purchased in Dublin gave respectively 3·34, 5·2, 6·64, and 13·6 per cent.

A different result was obtained with the ferrous phosphate. The British Pharmacopœia requires a standard of 44·8 per cent. f absolute ferrous phosphate. By preparing the salt according o its instructions a proportion of 60·9 per cent. was obtained, nd from four purchased specimens the following proportions were respectively found :—24·1, 29·6, 31·3, 49·2.

In magnetic oxide the British Pharmacopœia requires, by its olumetric standard, only a proportion of 28·8 per cent. of true erroso ferric oxide. A specimen prepared according to directions, owever, was found to contain only 19·4.

Professor **Tichborne** observed that the percentage of arsenic in a salt ike the arseniate of iron was an important point.

Professor **Attfield** thought the Pharmacopœia standard of purity was to e found rather in the text than in reference to the volumetric tests, which vere generally vague.

Dr. **Symes** said a little sugar added to the water in which the ferrous salts vere precipitated would assist to prevent peroxidation.

Mr. **Williams** said these ferrous salts were very liable to variation. Makers of the phosphate encouraged some oxidation, because without it the blue colour could not be produced which was so much preferred.

Mr. **Draper** thought Dr. Symes' suggestion was of value, and he had noticed that the saccharated carbonate of iron required more bichromate solution than if sugar were not present. In reply to Mr. Williams he had seen a good blue phosphate produced after strict adherence to the Pharmacopœia directions.

## FRAGMENTARY NOTES ON OPIUM.

*By B. S. Proctor.*

The writer pointed out the dangerous variation in the strength of commercial opium, the general run of samples varying from 4 per cent. of morphia to 12 per cent., not to mention exceptional specimens which show still greater divergence. Having pointed out that the drug is essentially variable in its character, and consequently that no definition of purity could be satisfactory, a more strict definition of strength than that adopted in the Pharmacopœia was advocated.

It was shown that commercial samples include varieties which are hygroscopic, and others which become crumbly and mouldy, but that none of these physical properties can be taken as indications of either good or bad quality. It was further shown that the official processes for extract of opium, and liquid extract of opium, do nothing towards remedying these defects, the extracts being liable to vary among themselves in a degree still greater than the variation in the quality of the crude drug from which they have been prepared. The standardising of opium was strongly advocated, and it was pointed out that the liquid extract would become a much more satisfactory preparation if made direct from a standard opium, and the quantity of the product so regulated that a fluid ounce of the liquid extract should contain three grains of morphia. This would correspond with four grains of acetate or hydro-chlorate of morphia as contained in the official solutions of morphia, and also pretty closely with the average strength of the liquid extract of opium as found in commerce.

Under the head of analysis, the writer drew attention to the difference of solubility of morphia and its meconate under treatment with benzine, and stated that when treating opium in considerable quantities in connection with Swan & Proctor's patent, he failed to find any morphia or codeia extracted by benzine, though in a process of analysis free morphia, in presence of a large proportion of narcotine, was taken up in small but appreciable quantity by the same solvent. The difficulty experienced by Professor Fluckiger in completely extracting the narcotine from opium for analysis received a probable explanation in the writer's observation, that though, in the absence of free acid, this alkaloid is readily dissolved by ether, chloroform, or benzine, it is but little acted on by these menstrua when present in an opium having a strongly acid reaction.

## SOLUBLE ESSENCE OF GINGER.

*J. C. Thresh.*

Requiring some time ago a strong solution of the active principles of ginger, which would mix with water or syrup without causing turbidity, I was led to make a number of inquiries and experiments, some of the results of which it is the purpose of this paper to communicate.

I found that most wholesale drug houses made and kept in stock a so-called soluble ginger essence, but in many cases the pungency was due to cayenne, and (with one exception) the pleasing aroma of ginger was wofully deficient. I also obtained several recipes for this essence, but none of them gave satisfactory results. One ordered the powdered root to be percolated with a dilute alcohol, another with a mixture of spirit and glycerine, a third ordered a strong decoction of the ginger to be fortified and preserved by the addition of a weak tincture of cayenne, &c. ; but not one of them yielded a result possessing the full flavour and odour of the ginger from which it had been prepared.

Thrown upon his own resources the author devised the following process, which yields a satisfactory preparation, and entails but little trouble.

Take of finest Jamaica ginger in powder 1 lb., pour upon this 8 ounces of rectified spirit, and after allowing it to stand for several hours add more spirit ; percolate to 16 ounces. To this add 2 ounces of heavy carbonate of magnesia, agitate, and add 24 ounces of water ; shake well, and filter. If the filtrate is turbid the whole must be well shaken with a little more magnesia, and again filtered. The filtrate possesses all the aroma of the ginger and a fair share of its pungency, and is of a pleasing yellow-brown colour. After keeping a few days it becomes turbid and deposits slightly, but if again filtered appears to continue clear.

The action of the magnesia is partly mechanical, partly chemical. for the peculiar tint of the essence is undoubtedly due to the action of the hydrate of magnesia upon the ginger resin, and the precipitate which forms soon after the essence is first made is a compound of resin and magnesia. I had suspected that the resin left in solution differed from that removed; but, upon evaporating the soluble essence and examining the resinous residue, I could detect no difference between them.

I have since found that calcium sulphate, calcium carbonate, and charcoal powder, are equally efficacious in removing the excess of resin, but the resulting solution is in all cases much paler in colour; and probably when charcoal is used the odour may not be so strong. These, no doubt, act mechanically, causing the aggregation of the resin precipitated by the water, hence it is probable that any fine inert powder will answer as well as the magnesia.

A syrup made by mixing equal quantities of strong simple syrup and soluble essence is very suitable for using with gazogenes, and a weaker syrup might with advantage replace the unsightly preparation of the Pharmacopœia.

Professor **Attfield** said Mr. B. S. Proctor, of Newcastle, not being able to be present, had sent a note on this subject, stating that an essence mixed with a small quantity of alum or sulphuric acid (not enough to impart any taste) would mix with water with a slight opalescence, but become quite clear in a week or two.

Mr. **Umney** said he had followed a process similar to that adopted by Mr. Thresh, but using dilute glycerine instead of spirit. This did not take up the resin, but only the essential oil. Much depended on the ginger employed. Exhaustion by spirit and precipitation of the resin by carbonate of magnesia was probably a good process, though he was not sure that it was entirely a mechanical effect.

Mr. **Savage** said he had found that an essence prepared with 2 parts of spirit and 3 parts of water did not take up the resin, and was quite soluble.

Dr. **Symes** had found a dilute spirit produce a good essence, but it should not be prepared by percolation, as a layer of resin would prevent the proper action of the menstruum.

Professor **Attfield** raised a question as to the inertness of the resin, and he reminded the members that Mr. Thresh had hinted that there might be two resins. He hoped Mr. Thresh would carry this investigation further.

Mr. **Draper** took a good deal of interest in this subject. He said the oil which was said to have been distilled from the ginger, and which came from Germany, was of no use for making essence or syrup. Certainly the virtues did not seem to lie in the resin.

Mr. **Sumner** said his son had worked on this subject, and his conclusion was that the aroma was found in the soft, floury parts of the ginger, and the pungency in the resin. No ginger gave such fine flavour as the Jamaica.

The **President** remarked that Dr. Squibb had lately made some investigations, which seemed to show that almost every drug required a special menstruum. He presumed that to get all the qualities of ginger into an essence, a further acquaintance with its character was necessary. To get merely a soluble essence did not seem a very difficult matter. Mr. Thresh seemed to have obtained that.

## NITRITE OF AMYL.

### *By D. B. Dott.*

This paper embodied the results of an examination of several samples of nitrite of amyl procured from different makers, with the view of ascertaining the degree of purity of the article in the market. The samples examined had a specific gravity varying from ·864 to ·876, the proper specific gravity being ·877. By a single rectification they gave a yield of 6·7, 11·5, 33·3, 47·5, and 65·0 per cent. respectively, boiling at 90° to 100° C., while a sample prepared by the author in the ordinary way gave 85·0 per cent. One of the samples had an odour quite distinct from that of genuine nitrite of amyl, and produced little effect on the heart's action by the inhalation of its vapour. It will thus be seen that there is a great variation in the quality of the amyl nitrite of different makers, and that some of it is of very inferior quality. The author considers that some standard of purity less rigid than that of the Pharmacopœia ought to be adopted, as it is impossible to prepare a nitrite of amyl boiling constantly at 205° F. Indeed, there seems to be some doubt as to whether that is really the correct boiling point. The process for preparing nitrite of amyl, by passing nitrous acid gas through amylic alcohol is held to be the best, being decidedly preferable to that by the direct action of nitric acid on the alcohol.

Mr. **Umney** remarked that he had himself observed the frequent impurities of nitrate of amyl some seven years ago. He considered that amylic alcohol, and not ordinary fusel oil, should be adopted for its preparation.

Professor **Tichborne** said Mr. Dott had confirmed an observation of his own made many years ago in the *Laboratory*. to the effect that boiling separated nitrite of amyl into amylic hydrate and nitrous oxide gas. Mr. Chapman had denied this at the time.

## NOTE ON BEBERIA.

### *By D. B. Dott.*

This was simply a note to announce that the author had obtained a crystalline hydrochloride of beberia, all the salts of that base previously described having been amorphous. The author expects, by an examination of the salt and the alkaloid precipitated therefrom to make sure of the composition of the latter, about which there has been some doubt.

Mr. **Siebold** read a paper on

## The Filtration of Hydrocyanic Acid and Cyanides, and its Relation to Alkalimetry.

He showed that Liebig's volumetric test for hydrocyanic acid by solution of silver nitrate was liable to error by the difficulty of ascertaining precisely the moment when the conversion of the acid into cyanide was complete. But he recommended as a modification of that test the following process. The acid is allowed to run from the pipette into an excess of solution of sodium hydrate; decinormal solution of silver nitrate is then added drop by drop until a slight opalescence is produced, and this point being attained, standard normal hydrochloric or sulphuric acid is added until the opalescence begins to increase, which does not take place until the whole of the free alkali is neutralised. For each c.c. of standard mineral acid thus required 0·01 c.c. should be deducted from the volume of the silver solution used, and the remainder calculated for HCy. Mr. Siebold also showed how this process was suitable for the estimation of the alkaline carbonates.

Mr. **Williams** took the opportunity of referring to the process he had recommended at the London meeting of the Conference for preserving hydrocyanic acid by means of an addition of Price's pure glycerine. Three years ago some was prepared containing 37½ per cent. of hydrocyanic acid, 37½ per cent. water, and 25 per cent. glycerine. On testing this a few days previously he had found it to contain 37 per cent. of hydrocyanic acid: practically it had lost none.

Mr. **Siebold** afterwards stated that though at the time when Mr. Williams had recommended his glycerine process he had proposed a plan of keeping the acid by considerably diluting it, and that he found his process answer well, he had since come to prefer the plan recommended by Mr. Williams.

## The Microscope in Materia Medica.

### *By Thomas Greenish, F.C.S.*

Mr. **Greenish** stated that vegetable histology deserved more attention from pharmacists than it usually receives: general botany is recognised as necessary, and the organs in which reside the active principles of the different plants used in medicine are generally well known, but the histological localisation of the particular tissue or tissues in which those active principles reside receives comparatively little attention, and this may in some measure be due to the fact that those elementary parts are distinctly visible, and capable of being examined, only with the aid of the microscope.

In cinchona the active principle has long been known to reside in the bark, but Carl Müller determined that the alkaloid resided in the parenchymatous, and not at all in the liber tissue of the bark.

Cultivation with reference to particular soils determines the development of one tissue at the expense of another: thus, holly cultivated in a rich soil loses the spiny character of its leaves; and some medicinal plants, by garden cultivation, lose much of their medicinal activity, as Schroft states is the case with the aconites. Other instances may be furnished to show the value to the pharmacist of a study of vegetable histology.

An instance in point may be mentioned to serve as an illustration. A sample of a root, as senega, was supplied to a pharmacist. A cursory glance showed that the root was thinner, of a lighter colour, and with fewer rootlets than the usual senega of commerce; other external characters of the mature senega were absent, and a decoction of it had much less than the usual pungency.

The histological examination of this root under the microscope showed it to be, in its general character, similar to an ordinary sample of senega, but with much less *cortical* relatively to its woody tissue; and as Schneider and others have found by analysis that the cortical portion is the seat of e active principle "senegin," the relative quantity of bark to ood is an element of value in the estimation of senega; and mparing the section of an ordinary root with that of a rootlet, e difference in amount of cortical tissue is remarkable, and it ill be found that the relative superficial area of the two cor-spond pretty closely with the results of Schneider's analysis, at the rootlets yield the most senegin; the conclusion arrived with regard to this sample being, that it was an immature nega, and one that did not fairly represent the senega root of e Materia Medica.

Mr. Greenish concluded his paper by stating his opinion that vegetable histology occupied its place side by side with neral botany, in the practical course of study necessary for e pharmacist, it would result in articles of the Materia Medica ing more critically examined, and immature specimens, such the sample in question, so deficient in that tissue which is o seat of the active principle would not be collected for portation, or find its way unchallenged into a well-regulated harmacy.

Mr. Sumner and Mr. Umney spoke of the poor quality of much of the nega that was now to be bought.

### Miscible Copaiba.

*By T. B. Groves.*

iscible copaiba, or more correctly saponified copaiba, was pro-uced some years ago by Mr. Henry Groves, now of Florence, ut until recently had not been critically examined. It is pro-uced by mixing with Maranham copaiba about one-sixth ot its ulk of a saturated solution of carbonate of potassium, and lowing the emulsion to stand for a few days, during which me a white crystalline substance is deposited, and the super-tant liquid becomes clear. No effervescence attends the re-tion, yet the acid resins of the balsam will be found united ith potassium, and thus rendered miscible, to the extent that aps generally are, with distilled water. The white deposit is, fact, bicarbonate of potassium, the action of the acid-resins aving been to deprive two molecules of the carbonate of half eir potassium, leaving the second atom to combine with both toms of carbonic acid and one atom of water.

The same process applied to Para copaiba revealed a great ifference between it and the Maranham variety. Whereas the tter formed a homogeneous saponified balsam, the former was arply divided into two portions—the upper a nearly colourless l, the lower a saponified balsam. The original paper describes lso the results of experiments on Gurgun balsam, and on mix-ires of it with copaiba balsam in the proportion of one to nine. t was decided, however, that the process could not be conve-iently applied either to the detection of this form of adultera-on or to that more frequently practised, viz., the admixture of nseed oil in the same proportion.

It was suggested that for administration in capsules this miscible copaiba" would offer some advantages over the ordi-ary balsam. It would mix more evenly with the contents of e stomach, and not float on the surface, causing pain and ausea. It was thought, moreover, that the alkali present ould be beneficial in the class of cases for which balsam of paiba is usually administered.

Some gelatine capsules had been filled with the miscible alsam to see if it acted on the material. "These," said Mr. roves "(*Miseris succerrere disco*) are at the disposal of embers of the Conference, and any report on their action that may be favoured with shall be treated confidentially."

Mr. Draper asked the strength of the solution of carbonate of potas-im.

Mr. Groves said it was saturated; a fluid ounce contained 34 grains.

### Baycuru.

*By Charles Symes, Ph.D.*

aycuru, or *Biacuru*, is the vernacular name of a plant growing the shores of Rio Grande, imbedding itself more or less in e sand and giving off a number of radical leaves of from 5 ches to 7 inches in length, and 1½ inch to 2½ inches in breadth; e flower resembles that of London Pride (*Saxifraga serrati-lia*). The whole plant is sometimes covered by the sea for ys and even weeks together, according to the direction of the ind, there being no tides in this locality. I am indebted for y specimen to Mr. Thomas Hallawell, and for reliable infor-ation concerning its medicinal properties to Dr. Landell, both sidents in Rio Grande.

There is no mention of the plant in "Chinoviz Formulario" on Guia Medica, which is essentially the pharmacopœia of Brazil, and Mr. Holmes has kindly searched the Pharmaceutical and British Museum Libraries without finding any reliable information concerning it. From a specimen, however, he concludes that it is *Statice Brasiliancnsis.* The root is the part used medicinally both fresh and dry, in the latter state the pieces are 6 inches or 7 inches long, and from ⅓-inch to 1 inch in diameter; tortuous in shape; cortical portion, dark chocolate; centre, a pale flesh colour; taste, slightly acrid, very astringent. The natives have unlimited faith in its virtues as an astringent and discutient, and this is confirmed to a great extent by medical testimony. Chemical examination indicated the presence of an alkaloid, but the sample being small, I had no opportunity for its complete isolation in more than a microscopic quantity; the activity of the root largely depends on tannin and an acrid resin soluble in ether and alcohol, and a small quantity of volatile oil. Pharmaceutically, the infusion (½ oz. to the pint), and tincture (2 ozs. to the pint), are the best forms for internal administration, and the decoction (1 grain to the pint), as a fomentation in swollen testes, &c., for which it is much used. It yields one-third of its weight of extract of a dark colour and highly astringent taste. Further supplies of this drug will probably reach this country, and should its value here be equal to that reported from Brazil, it will form a valuable addition to our materia medica.

### Authoritative Formulæ for Non-official Preparations.

*By F. Baden Benger, F.C.S.*

Some recent proceedings instituted against chemists for selling as "violet powder" a compound consisting mainly of hydrated calcium sulphate have resulted in convictions, it being held by the magistrates that starch, or a mixture of starch and powdered orris root, can alone be legally termed violet powder. It was not proved that calcium sulphate is in any way injurious as an absorbent application to the infantine cuticle; indeed, what most persons would consider very conclusive evidence to the contrary was freely adduced; nevertheless, newspaper accounts of the prosecutions were headed "Poisonous Violet Powder." The defendants, men in a highly respectable position, have doubtless suffered some pecuniary loss, and much annoyance and vexation, through failing to recognise as authoritative formulæ published in Gray's "Supplement," and similar works. Had it been contended that violet powder should consist of powdered violets we need not have been surprised. The question which has presented itself to my mind as one of possible interest to this Conference is, then, to what extent are we, as pharmacists, at liberty to apply our acquired knowledge and accumulated experience to the improved manufacture of such articles as violet powder, cold cream, and the like? Are we bound to follow blindly for ever Gray, Cooley, and other "Early English" authorities, never questioning the wisdom of the ancients? or is the other alternative to apply to a magistrate for a formula when it is not found to be in the British Pharmacopœia?

As violet powder forms the text of this communication, a more special reference to the new authoritative formula may be desirable. Is starch the most suitable substance that can be selected as the basis of an absorbent application to moist and irritable surfaces? I believe not. It is occasionally acid, frequently alkaline to begin with, and invariably and rapidly becomes acid when moistened and maintained at the temperature of the human body. I found by experiment that pure starch moistened with water and maintained at the temperature of 98° Fah. for four hours reddened litmus paper, in eight hours it was distinctly sour to the taste, and a few hours later it had acquired an offensive odour. It is probable that moist violet powder is often left in contact with the skins of children for a much longer period than this, and decomposition would be further advanced; such a compound of decomposing vegetable matter can scarcely be regarded as soothing. It is within my knowledge that for many years a violet powder has been largely manufactured and sold consisting entirely of French chalk and silicate of magnesia in impalpable powder, and this substance I regard as the best basis for a dusting powder. It is quite as absorbent as starch, is unalterable by combined heat and moisture, and possesses exactly the physical properties required in an application intended to absorb moisture, reduce friction, and prevent abrasions. In my own experience this powder has very satisfactorily replaced its ancient prototype, and a recent attempt (made from prudential motives on my part) to return to the formula of my forefathers has met with very serious opposition, nursing mothers insisting on being supplied with the silicate, even if shorn of its familiar floral designation. The Conference has already, at its Liverpool meeting, expressed a very decided opinion against the employment of misnomers by those who introduce popular remedies, and there is not a word to be said in its favour. Amongst perfumery stock we still have, however, "bear's greases," "taurus marrows," "marrow oils," "lime juice and glycerines," &c., &c. Public analysts will no doubt thank me for directing their attention to these. If we turn to the so-called patent medicines I fear that, in many cases, the ingredients indicated on the labels as at least prominent constituents would be the last the makers would think of employing; but there is another class of preparations in common use the nomenclature of which, though often incorrect, does not seriously mislead the public, and the alteration of which, either by assimilating the composition to the name, or by the adoption of new designations, would be attended by inconvenience to both buyers and sellers.

"Spirit of hartshorn" is not a spirit, nor is it now obtained from hartshorn. "Essential salt of lemons" could hardly be obtained from that fruit by the most skilful chemist.

Ferric oxide is very commonly known as "carbonate of iron," carbonate of soda as "soda." Cold cream is not a production of the dairy, nor does the manufacture of catgut ligatures any longer necessitate the destruction of the feline race.

It would be interesting to know what Mr. Erasmus Wilson thinks he is prescribing when he writes "aqua mellis." Gray gives the following formula:—"Aqua mellis," honey water for the hair: Honey 4 lbs., very dry sand 2 lbs. Put into a retort or body that will hold five times as much. Distil with a very gentle heat. A yellowish acid water, used to encourage the growth of the hair.

So far as I am aware the honey water of high-class pharmacy resembles this only in name, colour, and the use to which it is applied.

Many other instances might be cited, but enough has been said to illustrate what appears to me to be the somewhat difficult position in which pharmacists are placed with regard to the composition and nomenclature of some non-official preparations.

## Note on an Improved Preparation of Ergot.

*By A. W. Postans, F.C.S.*

The author considered the liquid extract which he brought before the Conference an improvement on the process given in the U.S. Pharmacopœia, and possessed of stability, activity, and good keeping power. The process is as follows:—

To 20 ounces of freshly-powdered ergot packed in a percolator, the extremity of which had been closed, is added a mixture containing 10 ounces each of rectified spirit and glycerine, and 5 ounces of water, the whole allowed to macerate for a week, at the expiration of which time the percolation is proceeded with, and the subsequent displacement continued with distilled water until the drippings almost cease to have any taste or colour. Eighteen ounces having been collected of the first liquid, the remainder is evaporated gently in a water-bath to 2 ounces, and then mixed with the previous quantity, so that 20 ounces of this fluid extract exactly represent 20 ounces of freshly-powdered ergot. Several obstetricians of eminence have found this preparation highly satisfactory.

Mr. Postans remarked that the main difference between the above process and the American consists in the addition, by the U.S. Pharmacopœia of half-an-ounce of acetic acid to each 16 ounces of liquor, thus rendering in his opinion an otherwise good preparation nauseous and unpalatable, as well as presenting a difficulty as to the desirability and wisdom of introducing acid into the stomach of patients.

In a short discussion which followed Mr. GROVES made a suggestion in regard to keeping ergot which he believed would prove more convenient than the method generally adopted. His plan was to coarsely powder the ergot, and then press it into squares. Only some fixed oil would be lost, which was of no medicinal value.

Mr. GERRARD had not gathered from Mr. Postnas what special advantage was offered by the process which he recommended over that ordered in the British Pharmacopœia.

Professor ATTFIELD said the present acquaintance with the chemistry of ergot was limited, and we could only treat it from our knowledge of its therapeutics. It was not certain wherein its active principles lay. This was a point worthy of inquiry, and as he knew that some eminent men were working on it this might soon be cleared up.

Mr. BOILEAU asked if the age of the preparation might be thought to have any effect on its efficiency.

Mr. GREENISH said that observation had shown that whatever might be the active principle of ergot, it was certain that all its medicinal virtue was extracted by water.

Mr. POSTANS in replying, said there was no doubt, as Mr. Greenish had said, that water would extract the active principle, but a preparation so made would not keep. The U.S. Pharmacopœia added acetic acid to keep it, but this addition had the disadvantage of forming salts. He had found the process he had described give good results, and that was why he had brought it under the notice of other pharmacists.

## Comparison of the Strength of some of the Cinchona Preparations.

*By Charles Ekin, F.C.S.*

The author having procured a supply of calisaya bark, carefully tested it by Dr. de Vrij's method, and found the total alkaloids, which he believed to consist chiefly of quinine, to represent 1·96 per cent.

Having ascertained this he next made and tested with the utmost care, always using bark of the same stock, a tincture, an infusion, a decoction, and a fluid extract. By the side of these he also tested Battley's liq. cinch. cord., from a freshly-opened bottle. The following table shows the proportion of alkaloid obtained from 100 grains of bark in each of the preparations, reckoning Battley's at its professed strength of 1 drachm of liquor being equivalent to 1 ounce of bark:—

| | Total alkaloids Grains |
|---|---|
| 100 grains of bark yield .. .. .. .. .. | 1·96 |
| 500 minims tincture (made from 100 grains bark) yield (about 9 drachms) .. .. .. .. | 1·89 |
| 2,000 minims infusion (made from 100 grains bark) yield (about 4½ ounces).. .. .. .. .. | 1·31 |
| 1,600 minims decoction (made from 100 grains bark) yield (about 3½ ounces).. .. .. .. .. | 1·26 |
| 25 minims fluid extract (made from 100 grains bark) yield .. .. .. .. .. .. .. | 0·47 |
| 13 minims Battley's liq. cinch. cord. (equal, according to label, to 100 grains bark) .. .. .. | 0·46 |

The experiments were of course made on much larger quantities than are here indicated, but in the above table all have been reduced to percentages for the purpose of comparison.

The proof spirit tincture therefore nearly exhausts the bark. Boiling water, as in the case of the infusion and decoction, takes up about five-eighths of the alkaloids, and cold water, as in the case of the fluid extract, takes up, or at all events only retains, about one-fourth.

As manufacturers well know, many yellow cinchona barks, even though rich in alkaloids, are not suitable for the preparation of the liquid extract. The bark employed in the experiments had been kindly supplied by one of the first West-end London houses from their own stock, from which they themselves prepared the liquid extract. It will be seen the sample, provided Dr. de Vrij's method of assay entirely exhausts the bark, barely comes up to the Pharmacopœia standard, even assuming the total alkaloids consist for the most part of quinine, which, from their almost entire solubility in ether, is not improbable.

The yield from the tincture seemed very high. After it was made the exhaustion of the bark by percolation with proof spirit was continued until colour and taste were almost entirely absent. This last product yielded a residue equal to 0·23 grains of alkaloids to 100 grains of bark, bringing up the total alkaloids to 2·12, or 0·16 in excess of the quantity obtained from the bark itself. This excess may be due to a small quantity of quinovin being dissolved by the chloroform in the process of estimating the alkaloids.

The results further show that Battley's liquor, although by no means representing the finest bark in the proportion claimed, is twice the strength of the B. P. preparation.

Professor ATTFIELD also read a paper contributed by Mr. J. Barker Smit on "The Assay of Cinchona," by means of a standard solution of a permanganate, the proportion of the alkaloids being indicated by the decolorisation of the solution.

This process has been already described by the author in THE CHEMIST AND DRUGGIST, but the description given in the paper before the Conference was not sufficiently clear to serve as a basis for discussion.

Mr. UMNEY characterised the paper of Mr. Ekin as one of great value. Experiments to show the amount of alkaloid taken up by the various forms of preparation had long been wanted. The process of the British Pharmacopœia for making the fluid extract he had already shown to be a most wasteful one. The Calisaya bark now offered in the market varied in its constituents very greatly, and he was confident that in a few years it would be entirely replaced by the East Indian bark.

Professor MARKOE said this subject had been much studied by some of the best pharmacists of America. All efforts to obtain an aqueous fluid xtract had proved total failures. An extract containing 3 parts of proof irit and 1 part of glycerine had been adopted, and was satisfactory. He uite agreed with Mr. Umney as to the deteriorated character of the alisaya bark.

Mr. **Sumner** also spoke of the varieties of this bark as now offered in the arket.

Mr. **Fletcher** asked why Mr. Ekin, as his object had been to extract the uinine, had used spirit in preference to chloroform or amylic alcohol, hich were the menstrua recommended by Carles in the process which had een followed.

Mr. **Brady** said it was well known that quinine makers were quite willing o buy residues of bark after it had been used for the preparation of the uid extract.

Mr. **Mason** thought in mentioning this Mr. Brady had let out a secret hich manufacturers would rather have had let alone.

Mr. **Ekin**, in replying, said he was aware that chloroform or ether ould have answered as well as, and perhaps better than, alcohol, but the tter was convenient; and if it took up a little hydrate of lime, that could asily be removed by means of sulphuric acid.

## ON THE ADULTERATION OF DRUGS.

*By Charles R. C. Tichborne, LL.D.*

HE author stated that in his paper he should not refer to the dulteration of the expensive drugs and chemicals such as affron, scammony, quinia, nitrate of silver, which no doubt did ccur; but a few recent experiences would illustrate the fact hat adulteration is perhaps even more extensively carried on ith cheap drugs than dear ones. He had been informed on good uthority that powdered hematite—red iron ore—is frequently old as the peroxide of iron. It is still a favourite remedy, articularly among amateur doctors; and as the Pharmacopœial rticle is only worth a few pence per lb., a variable rock with arious proportions of oxide of iron—10 to 70 per cent.—should ot be substituted for it. He was not, however, prepared to ouch for the correctness of this statement from actual observaion; but the following instances had come under his own mmediate notice:—

"Phosphorus and nitric acid," he said, "are not very dear subtances, and therefore we would suppose that a preparation like hosphoric acid would always be made, as directed, from those hemicals, particularly when sold as the B. P. acid; but I place efore you a specimen of the so-called B. P. acid which is made rom bone-ash and oil of vitriol. On reference to Watt's Dictionary of Chemistry,' vol. iv., pages 500 and 544, it s there stated that a very pure acid may be obtained by reating bone-ash with oil of vitriol, repeated treatment with $_2SO_4$, evaporation, and other manipulations not necessary to pecify in this paper. The writer says, after describing the rocess, 'The filtrate, when boiled, constitutes a solution of rtho-phosphoric acid, contaminated with a trace of sodium, ut otherwise pure.' Now, whether it is possible to remove he whole of the lime and magnesia by easy and cheap eans I am not prepared to say. But, as far as I can see, he sample of so-called phosphoric acid under examination more xactly represents the biphosphate of lime of the manureakers than the Pharmacopœial acid. It gave a voluminous recipitate on adding chloride of ammonium and carbonate of mmonia, and also contained appreciable quantities of magneium. Here we have a chemical product cheap in itself, cheap s regards the sources from which it is procured, and yet 'it hall not escape calumny.' The doctors' dose—30 drops—is not uch, and yet it must be cheapened for the commercial greed.

"Linseed is a very cheap commodity, owing partially to the xtensive cultivation of the plant for flax and other purposes, nd also because, as regards the seed, we utilise the whole of he residue after expressing the oil. After getting the latter aluable product we have the linseed cake, also valuable as a attle feeder, which, when ground, is prized by the medical man r its emollient properties. Well may the plant be called *inum usitatissimum.* Of such universal application is this ubstance that it becomes important that we should have it xtremely pure and free from extraneous matter. Yet even the heapness of this commodity has not saved it from the adulteator's hands. Extensively as it is pressed for oil, grapes are much more extensively pressed for wine, and, unfortunately, he wine-grower cannot utilise the produce of his wine press xcept for manuring his vineyard; therefore the wine-press esidue may be practically considered as a dead loss. But one ngenious wine-grower bethought himself that, as he had a press, was only necessary to add a little linseed farina to grape esidue to produce a very presentable linseed cake, as far as the ye went. I show you now specimens of linseed cake manuactured abroad, in which the residue of the grape, stones and stalks, can be easily recognised by a very low power of the microscope."

Professor Tichborne next showed three samples of colocynth. Now the Pharmacopœia describes colocynth as "the dried decorticated fruit freed from the seeds." A colocynth apple had been found to be thus composed—

| | Per cent. |
|---|---|
| Seeds (Inert) .. .. .. .. .. .. .. | 47·19 |
| Rind (nearly inert) .. .. .. .. .. .. | 33·78 |
| Pulp .. .. .. .. .. .. .. .. | 19·03 |
| | 100·00 |

So that, taking Meissner's analysis, which states that the pulp only contains 14 per cent. of colocynthin, we have—

| | Per cent. of active principle |
|---|---|
| Pure sample .. .. .. .. .. .. | 14·3 |
| Turkey pulp ground without removing seeds .. | 4·2 |
| Colocynth ground with rind and seeds .. .. | 2·6 |

Of three samples shown to the Conference, Professor Tichborne said all were obtained in commerce.

"One is a sample of the very best average quality, but still containing a very large proportion of seed; in fact, it is very seldom without indications of the presence of that substance, and I believe it is generally the practice to powder the colocynthin pulp with the seeds remaining in it. The second sample is one which is much darker in colour, and consists of the whole colocynthin apple ground. The third sample is not only the whole colocynth ground up, but a sufficient quantity of potato starch added to make the colour light—as well as being a profitable transaction. A medical man, indeed, prescribing 8 grains of such a powder, would be disappointed in the results."

A somewhat animated discussion followed Dr. Tichborne's paper. Mr. Siebold said as pure a phosphoric acid could be made from bone-ash as by the B. P. process, and that in these chemical products, if they fulfilled the tests given, it was not essential that the exact process published should be followed.

Mr. **Williams** also knew that the preparation from bone-ash could be perfectly purified.

Mr. **Umney** said that colocynth arrived at this market in a peeled condition. It was never met with unpeeled. The seeds contain 50 per cent. of essential oil, and any grinder would carefully avoid those seeds. As to the mixture with potato starch, he presumed they knew more of that substance in Ireland than in England. Phosphoric acid was not, as a rule, made either from bone-ash nor by the B. P. process, but was generally obtained by the combustion of phosphorus under glass jars. No one could dispute that saffron was largely adulterated, but that was done entirely abroad. It was dressed to any price with carbonate of baryta, an adulteration which can be readily detected by the fingers.

Dr. **MacSweeney** made a long speech on adulterations from the practising physician's point of view, and he urged the society to take means to ensure greater purity.

Mr. **Boileau**, Mr. **Conyngham**, Mr. **Holmes**, and other Irish druggists maintained the general purity of drugs sold in Ireland.

Mr. **Frazer** urged that the excuse that the public would have cheap drugs was not a good one; the public ought not to have the choice.

Professor **Tichborne**, in reply, said he did not think it necessary to contradict indefinite trade statements. How the articles came to be adulterated was not his affair. He was rather surprised and sorry to observe the tone adopted. It was a well-known fact that there were good and bad, pure and impure drugs in the market. Gentlemen first indignantly denied that adulteration did occur, and then justified it. Mr. Siebold, for example, had explained how the inferior phosphoric acid was produced. In almost every instance these adulterated drugs had been offered commercially as samples. The other day he received a little wooden box containing a sample of "pure pepsine," which he found to contain 80 per cent. of sugar of milk. He had brought these facts forward because they actually did exist, and being known they could be used at discretion. Would purchasers, for instance, buy linseed cake if they knew it to contain half its weight of grape refuse? Gentlemen had contradicted each other in regard to colocynth. His point was that one sample contained 2 per cent. of colocynthin, while it should have contained 14 per cent. Potato starch had been referred to, and it was said that this was a substance best known in Ireland. Now it happened that not a particle of potato starch was made in Ireland; all they had was brought from England. He believed the discussion had proved the existence of adulteration, and the necessity of the Adulteration Act.

The **President** thought there had been some misapprehension of the statements which had been made. A certain medical gentleman who had spoken seemed to imply that a general system of adulteration prevailed, but during the luncheon interval he (the President) had had an opportunity of speaking to him, and had told him something of the objects and aims of the British Pharmaceutical Conference. Had he been present, he would himself have explained that he did not intend his remarks to apply to the trade generally.

## ON THE DISTINCTIVE TESTS FOR CARBOLIC ACID, CRESYLIC ACID, AND CREOSOTE.

*By A. H. Allen, F.C.S.*

THE object of this paper was to show that the tests proposed for distinguishing between carbolic acid and wood tar creosote fail to detect cresylic acid, and that the latter is more frequently mixed with the creosote than the former. In the experiments to be recorded carbolic acid was represented by Calvert's No. 1, creosote by Morson's; and cresylic acid was prepared by fractional distillation from Calvert's No. 5. The following facts are to be noted:—

Pure carbolic acid takes up 26 to 27 per cent. of water to form a hydrous carbolic acid; cresylic acid will only absorb 13 to 14 per cent. It has not previously been supposed that carbolic acid would take up so much.

*Action of Cold.*—Absolute carbolic acid is solid at ordinary temperatures, and the hydrous substance solidifies in a freezing mixture of hydrochloric acid and crystallised sulphate of sodium. Neither absolute nor hydrous cresylic acid, nor creosote, shows any signs of freezing on exposure to the same degree of cold.

*Solubility.*—Carbolic acid (absolute) will dissolve in 10·7 parts of cold water, and more freely in hot water. Absolute cresylic acid dissolves in the proportion of 1 to 31. These figures are taken after allowing for the water which combines with either acid to form hydrous compounds. Carbolic acid is soluble at 60° Fahr. in an equal proportion of a solution of caustic soda 6 per cent., and it is likewise soluble in an equal volume of liquid ammonia; cresylic and creosote are insoluble in the same quantity of the former (the creosote being the least soluble), and in ammonia cresylic acid requires 16 volumes, and creosote 60 to 80 volumes.

Benzol mixes with all three in any proportion, and separates the water from the hydrous acids; benzoline (petroleum spirit) mixes with cresylic acid and creosote in all proportions, but carbolic acid will not take up more than half its volume. Price's glycerine (sp. gr. 1·258) was found to mix in all proportions with carbolic and cresylic acids, but creosote will not dissolve in it. The acids are thus distinguished. A mixture of one volume of carbolic acid with one volume of glycerine is not precipitated by the addition of three volumes of water, but a similar mixture of cresylic acid and glycerine is precipitated on the addition of two volumes of water. The addition of one drop of a 10 per cent. aqueous solution of ferric chloride to 15 cc. of an aqueous solution of cresylic or carbolic acid, causes a permanent violet-blue coloration. When creosote is similarly tested, a blue colour results, which almost instantly changes to green and brownish-yellow.

Other distinctive tests given in books the author had not proved successful. Thus, in various manners carbolic acid, cresylic acid, and wood-tar creosote can be readily distinguished from each other. In the case, however, of a mixture of the three substances many of the tests are greatly reduced in value, or rendered absolutely worthless. As the problem is to detect the coal-tar acids in presence of wood-tar creosote rather than the reverse, only affirmative tests for the former bodies are of service, and in many cases these are seriously modified by the simultaneous presence of creosote. Thus, as has been pointed out by Mr. J. Williams, the ferric chloride test entirely fails to detect the presence of carbolic acid in a mixture of equal parts of that substance and creosote. The only marked differences the author had been able to observe between Morson's creosote and a mixture of equal measures of that liquid and Calvert's No. 5 carbolic acid are the following:—

When shaken with twice its bulk of 9 per cent. soda solution pure creosote was dissolved, and remained in solution when the solvent was increased to three volumes. The mixture was insoluble either in two, three, or four times its volume of 9 per cent. soda. This anomalous result proved to be due to the presence of water, which reduced the strength of the soda solution. When the water was previously expelled by boiling the mixture of crude carbolic acid and creosote, solution took place with two volumes of soda.

When shaken with Price's glycerine (specific gravity 1·258) pure creosote remained undissolved, though the proportion of glycerine was varied from one to three volumes. The mixed creosote dissolved completely and readily in an equal measure of glycerine. The liquid was not affected by a drop or two of water, but a further addition caused precipitation. A mixture containing 25 per cent. of creosote, when shaken with an equal measure of glycerine, was not precipitated by less than one and a quarter volume of water.

## A Reaction of Orange-flower Water.

*By R. Reynolds, F.C.S., and C. H. Bothamley.*

A patient complained that a mixture containing nitro-hydrochloric acid and orange-flower water had a pinkish hue, which was not the case to so great a degree when the same medicine was dispensed elsewhere. It is already known that nitric acid produces a pink colour with orange-flower water, Gmelin's "Handbook of Chemistry," [vol. xiv., p. 386, recording various observations on the subject. The authors criticised some of these statements made by Ader in the year 1830. Oil of neroli is the oil which floats on the distillate when orange-flowers are distilled with water. The oil producing the colour re-action is that which is held in solution in the water. By means of ether this was separated, the water yielding 0·71 per cent. of oil, which had a delicious fragrance. This oil gave the reactions with nitric acid to an intensified degree. The water from which it had been removed was no longer affected by nitric acid; it had lost all scent of orange-flowers, but smelled like roses. Parrish's "Practical Pharmacy," 1859, states that orange-flower water has marked sedative effects, and that in doses of a tablespoonful it is found to allay nervous irritability and produce refreshing sleep.

Mr. Greenish had observed that nitric acid caused a pink colour in orange-flower water. Dr. Hoffmann, in the "Archiv der Pharmacie," said he believed it was caused by an action on some dust of coniferous woods which he had traced in the water. He (Mr. Greenish) had not observed this. M. Goublins stated that two orange-flower waters were made in the South of France—the one from the flowers, the other from the leaves. That made from the leaves did not turn pink, that from the flowers did; but it lost this characteristic after some time, he presumed from the loss of oil.

Mr. Groves suggested that the difference noted in the mixtures might have been due to one dispenser using the water in a concentrated state, and the other regarding it as a triple water and diluting it accordingly. It would be interesting to know what was the general custom in this respect. He himself, where it was evident that the orange-flower water was ordered as a mere flavoured excipient, treated the imported water as triple and diluted it accordingly.

Mr. Ekin said he also made a practice of diluting it in the proportion of 1 to 2. Referring to Mr. Greenish's remarks, he had always supposed that orange-flower water improved by keeping. A certain French house recommended that it should be kept.

The President said he had seen directions that it should be kept in the dark and unstopped.

Mr. Payne (Belfast) said the question Mr. Groves had raised was an important one. In his neighbourhood the medical men frequently ordered the water in quantities of ½ oz. or 1 oz. in a mixture. He was in the habit of dispensing the water as imported in those cases.

Mr. Conyngham said he believed the general practice was the same as Mr. Groves had indicated.

Dr. McSweeny said he frequently ordered the orange-flower water in mixtures in proportion of 2 oz. to an 8-oz. mixture. He expected that the strong concentrated water would be dispensed.

Mr. Benger asked why orange-flower water should be treated differently to rose-water. His experience was that the imported water was regarded as a triple water.

Mr. Frazer said they diluted it in the proportion of 1 to 2. He had always found it get richer by keeping.

The President said it seemed as if the method of using it should vary somewhat according to the locality, and according to the purpose for which it was prescribed. Where it was only required for flavouring purposes, for example, it could not be of great medical importance which was used; but in his neighbourhood some physicians had faith in its sleep-producing power, and often prescribed it quite alone, in the form of a draught. It was, therefore, his uniform practice to use it in its concentrated form. He conceived that there might be a distinction between this and rose-water, for the reason that there was an official formula for the latter in the Pharmacopœia.

## Notes on Various Samples of Dialysed Iron.

*By R. Reynolds, F.C.S., and C. H. Bothamley.*

(Abstract.)

The authors referred to the fact that so far back as the Nottingham meeting of the Conference in 1866, Dr. Wagner, of Pesth, exhibited a specimen of Ferrum Dialysatum, and also remarked that for the 10 years which followed it had been absent from the literature of British pharmacy. They quoted some French and American authors, and gave the following as the results which they had themselves obtained:—

| | Source | Reaction | Sp. gr. | $Fe_2O_3$ per cent. | Cl. per cent. |
|---|---|---|---|---|---|
| I. | London, M | Neutral | 1·0439 | 4·707 | 0·206 |
| II. | German | Acid | 1·0572 | 5·866 | 0·219 |
| III. | Fer Bravais | Neutral | 1·0316 | 3·430 | 0·194 |
| IV. | London, H | Neutral | 1·0560 | 4·481 | 0·051 |

All the samples but No. 2 were described as almost tasteless. No. 2 had a marked chalybeate flavour, and gave a distinctly acid reaction to test-paper, having also the highest sp. gr. of any of the specimens. Its percentage of ferric oxide is also higher than in any other case, in fact exceeding that which is theoretically possible. This sample had been offered at a much lower price than any other, and the authors were disposed to agree ith Prof. J. M. Maisch, who had described a similar prepara- on imported from Germany, and which he regarded as made by turation alone or by imperfect dialysis. The authors thought at the reaction towards test-paper should always be noticed, d such samples rejected as reddened litmus paper. The mus paper must be carefully washed under a stream of water.

The PRESIDENT remarked on the great popularity which this product had pidly acquired.

Professor ATTFIELD remarked that when Graham made his researches me years ago he did not succeed in obtaining a solution containing more an 98½ per cent. of iron. It appeared from this paper that from London mples gave 99 per cent. He noticed that Mr. Bothamley had used amonia in his experiments, and he should suppose that that would ssibly carry away some little chlorine with it. He thought it probable at the chlorine in small proportion had some effect in keeping the preration liquid.

Dr. SYMES said this preparation was not so very new. He had dispensed some ten years ago. He said in preparing it it was most important to p the process at the right moment, which was indicated when any ctose was observed on the dialyser.

Professor MARKOE said a good rule was to stop the dialysation when the uid gave no further reaction with nitrate of silver.

Mr. UMNEY said this was another instance of a wrongly-named prepara- n. We called it "dialysed iron," whereas it was the substance which did t pass through the dialyser.

The PRESIDENT explained the process he adopted for preparing dialysed n. which was as follows:—6 fl. ozs. of liquor ferri perchlor. fortior is xed with 12 fl. ozs. of distilled water in a stoppered bottle. To this is ded, gradually, 9 fl. drachms of liquor ammoniæ fortis, the whole being aken at each addition of ammonia, until the precipitative oxide is re- solved. A dialyser is then prepared by stretching a sheet of parchment per over the open end of a No. 6 Wedgwood funnel, gathering up the ges of the paper outside the funnel, and tying them round its neck. e mixture is then introduced through the small open end of the funnel, d the apparatus placed on a rough support in water, the outside level of ich should correspond as nearly as possible with the level of the liquid hin. The water should be renewed every morning for 14 days, when process is complete. The contents of the funnel are then carefully nsferred to a measure. If less than 24 fl. ozs. the measure must be made with distilled water; if more, the liquid must be evaporated to that ntity. Thus made, the liquor ferri dialysatus is of the same strength ron as the liquor ferri perchlor. of the P. B.

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## NOTES ON A NEW DOUBLE IODIDE.

*By Frederick W. Fletcher, F.C.S.*

E author, while experimenting upon a complex solution, which ongst other things was known to contain a salt of quinine, s somewhat astonished to find a copious scarlet precipitate duced on the addition of potassium iodide. The colour was sufficiently vivid for that of mercuric iodide, and with the eption of the little-known but curious double iodide of rcury and copper, no iodide with a like appearance, produced ler similar conditions, suggested itself.

The precipitate was found to contain besides the halogen, muth, and quinine. Subsequently the compound was care- ly prepared, and its formula demonstrated by analysis. It ved to be a compound of tri-iodide of bismuth and hydrio- e of quinine, in the proportion of two molecules of the former one of the latter substance, and it would therefore have the mula—

$$(BiI_3)_2C_{20}H_{24}N_2O_2.HI.$$

The salt is very sparingly soluble in cold, but more freely in water. Rectified spirit dissolves it slightly in the cold, but y readily when warmed. It is completely taken up by an oholic solution of potassium iodide, forming a brilliant mson solution. It is decomposed by the stronger acids with eration of iodine. Digested in strong solution of ammonia, colour is destroyed, and an insoluble residue of oxide of muth and quinine remains.

radually heated in a porcelain crucible, it at first fuses to a ning purplish-black mass, and as the temperature increases, nes of iodine, together with scarlet-coloured vapours are lved, which condense upon a cold surface, in a parti-coloured osit, which presents under the microscope a crystalline ucture.

When a few grains of the salt are rubbed upon paper and tly warmed, like the double iodide of mercury and copper, it omes black, regaining its original colour gradually, if allowed cool spontaneously, and instantly if the paper be laid upon nething cold, such as a steel knife or bottle of water.

Whether this compound possesses any special medicinal value a point which, of course, experiment can alone determine. that can at present be said is, that if it is desired to inister quinine and bismuth in conjunction with iodine, the t under notice affords an admirable method of doing so.

t is possible that the decomposition which gives rise to its mation may be found of value as the basis of a volumetric cess for the estimation of salts of bismuth and quinine.

Mr. ALLEN said that this paper suggested a point of much practical interest. The changes of colour which this salt passed through in consequence of changes of temperature was analogous to those occurring in double iodide of mercury and copper, to which Mr. Fletcher had referred. This was a very curious characteristic of these salts.

Mr. GERRARD believed that the salt described by Mr. Fletcher had been previously noticed by some gentleman connected with the London Hospital —he did not remember his name—but he thought his notice of the salt was published in the *Pharmaceutical Journal* some three years ago.

In reply to Professor Attfield, Mr. GERRARD said no analysis was published.

Professor ATTFIELD said he had no recollection of the matter.

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## NOTE ON REICHERT'S IMPROVED THERMOREGULATOR.

*By Charles Symes, Ph.D.*

THERMOREGULATORS are very useful aids to pharmacy. Extracts, when not manufactured on the premises, are often too soft for dispensing purposes, and have to be further dried. This is an operation of some delicacy if the result is to be accomplished without injury to the product. The use of a thermoregulator simplifies the work, and renders it such as to require very little care or attention. In drying small quantities of precipitates, and, indeed, in all operations where desiccation or digestion is to be conducted at a uniformly moderate or even high temperature, these instruments save care and anxiety.

Dr. Symes exhibited and described the instrument named at the head of this paper.

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When the reading of papers was concluded, Mr. Ward (Sheffield) supported the invitation which had been sent by the chemists of Sheffield to the Conference to meet in that town next year. He assured the members that the Sheffield chemists would give them a very cordial welcome and would do their utmost to make the meeting a success.

The invitation was thankfully accepted on the motion of Professor Attfield, seconded by Mr. Williams.

Professor Markoe said that the American Pharmaceutical Association would probably meet in New York about September, 1879, and he was authorised to say how very glad they would be to see any British pharmacists at that meeting.

A vote of thanks to the resident chemists for their generous hospitality was moved by Mr. Ekin, seconded by Mr. Frazer, and supported by Professor Attfield, who said that in all the correspondence he had had with gentlemen in Ireland on this subject he had met with the greatest enthusiasm in regard to this visit of the Conference to Ireland.

Mr. Hayes replied. He said that the visit of the Conference to Ireland had given the Irish chemists unfeigned pleasure, and they had most sincerely offered the "hundred thousand welcomes" which he had written in the old Celtic expression at the end of his circular.

The following officers were elected for 1879:—

*President:* G. F. Schacht, F.C.S., Clifton.

*Vice-Presidents:* Professor Tichborne, F.C.S., Dublin; R. Reynolds, F.C.S., Leeds; J. Williams, F.C.S., London.

*Treasurer:* C. Ekin, F.C.S., Bath.

*General Secretaries:* Professor Attfield, F.C.S., London; F. Baden Benger, F.C.S., Manchester.

*Other Members of Executive Committee:* M. Carteighe, F.C.S., London; T. Greenish, F.C.S., London; H. N. Draper, F.C.S., Dublin; A. H. Mason, F.C.S., Liverpool; C. Symes, Ph.D., Liverpool; W. A. Tilden, D.Sc., F.C.S., Clifton; C. Umney, F.C.S., London; J. C. Thresh, F.C.S., Buxton.

*Auditors:* W. Hayes, Dublin.

The Executive Committee will appoint from the Sheffield pharmacists a vice-president, a local secretary, an auditor, and another member of committee.

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## THE ENTERTAINMENTS.

MOST cordially and liberally had the chemists and druggists of Ireland provided for their visitors. Pharmacists in several of the chief towns had joined with those of Dublin to make this visit a worthy commemoration of the establishment of pharmacy in Ireland on a sound and independent basis, and the recognition of this independence by a body representing the best of the English and Scottish pharmaceutists. The College of Physicians placed their handsome and spacious hall at the service of the Conference, and arrangements of a most satis factory character had been made with several of the best hotels in the city for the accommodation of visitors. A luncheon was provided in the Physicians' Hall each day that the Conference met, and to this all visitors and members were invited.

The day following the meetings all "foreigners" were invited to a series of entertainments, which, commencing at tolerably early morn, was kept going without any flagging until close upon midnight. A long special train left Harcourt Street Station at 8.25 a.m., and after a journey occupying an hour and a half, the greater part of which was on the seacoast, landed its passengers at Rathnew, county Wicklow. Here were waiting a large number of Irish cars, with several waggonettes. The procession wound along through beautiful scenery as far as the Devil's Glen, a romantic and charming valley, from the heights of which superb views of the Wicklow coast, the Bay of Dublin, and the Irish Sea were obtainable. The cars awaited their passengers at the other end of the glen, and drove away to the famous Glendalough or the Seven Churches. Here an excellent luncheon was spread in a garden under a long, thick bower. And here an "exalted personage" connected with the Pharmaceutical Society, whose chemical skill ought to have served him better, might have been seen pouring nutmeg custard out of a jug in the innocent belief that he was helping himself to salad dressing. After luncheon there was time for a stroll. The ruins of seven churches were all at hand, and their origin and probable purposes were ably lectured on by those who had had the forethought to read up a guide book before starting. It was noticeable that the Irish gentlemen themselves were the least dogmatic respecting these interesting relics. Close by was one of the curious round towers, of which Ireland possesses several, the age and object of which are, we believe, perfect mysteries. Some say they date from the forgotten age, when Ireland was contented. In a beautiful glen a little further off was a lovely little lake, where some pious saint religiously murdered a beautiful girl, who did not sufficiently respect his sanctity.

Returning by a different road, the party was taken through the Vale of Clara, and at Rathdrum the special train was waiting, which brought all back to Dublin at 7 p.m.

But this was not all. The Irish hosts were determined to fill up every moment of the day, so the travellers were next carried away to the Exhibition Palace, where at 7.30 a sumptuous banquet was provided, which wound up the visit.

After dinner Professor Tichborne, who occupied the chair, gave several loyal toasts, following these with "The British Pharmaceutical Conference," to which the President responded, expressing his appreciation of the hearty good feeling which he had met with from the moment when he first set his foot on the shore of Ireland to that hour.

Professor Attfield proposed "The Irish Committee," and especially mentioned Mr. Hayes and Mr. Draper. These gentlemen were heartily applauded, and replied in telling speeches.

Mr. Schacht proposed "The Irish Pharmaceutical Society," and Professor Tichborne, Mr. Pring, and Mr. Holmes responded. "The Ladies" were toasted by the Chairman, and replied for by Professor Cameron. Mr. Savage proposed "The Medical Corporations of Ireland," to which Dr. Gordon, Dr. Macnamara, and Dr. Collins replied. Mr. J. G. Boileau gave "The Pharmaceutical Society of Great Britain," coupling with it the name of the President, Mr. Williams; and Dr. Whittaker proposed "The Press," which was acknowledged by Dr. Jacob, the editor of the *Medical Press and Circular*, and Mr. Scott. Several amateurs gave songs during the evening, one young lady winning great applause by her sweet rendering of one or two of Moore's Irish melodies.

Several members of the Conference were introduced by Mr. Holmes to the members of the "Irish Model Yacht Club"—a floating club—moored in Kingstown Harbour. They were cordially received and entertained by the club on three evenings. The members of the Conference who took part in these visits found, as one of them expressed it, "the ozone" most refreshing. The members of the club most active were Mr. Murphy, secretary, Mr. Treacy, treasurer, Mr. Stevenson, Mr. F. D. Lewis, and Mr. Holmes.

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The following were the members and visitors present during the meetings:—

*Barnsley.*—T. and Mrs. Lister. *Bath.*—C. Ekin.

*Belfast.*—T. Ball, M.D., J. J. Coskar, F. Hodges, J. C. C. Payne, R. W. Pring, H. Whitaker, M.D., W. Whitla, M.D.

*Boston, U.S.*—Prof. Markoe. *Bray.*—A. E. Doran. *Brighton.*—W. D. Savage. *Bristol.*—J. Pitman. *Castlebar.*—H. J. Diver. *Cheltenham.*—W. Barron. *Chester.*—G. Baxter.

*Clifton.*—W. Barry, O. Giles, R. M. Hatch, G. F. Schacht.

*Cork.*—W. Haughton, T. R. Lester. *Droitwich.*—E. Taylor.

*Dublin.*—W. Allen, W. N. Allen, jun., P. T. Bemingham, E. J. Boileau, J. G. Boileau, S. Boyd, Dr. Browne, J. E. Brunker, J. P. Cavenagh, T. Churchill, T. Collins, H. Conyngham, H. N. Draper, G. F. Duffey, M.D., J. Durham, M. Eustace, J. Evans, J. M. Finney, F.C.P., J. Goodwin, G. H. Grindlay, T. L. W. Grimshaw, M.D., C. A. G. Gubbins, R. Gun, J. P. Harold, W. Harold, C. H. Hartt, E. M. Hodgson, J. T. Holmes, J. Jackson, A. H. Jacob, M.D., S. Kuaggs, J. P. Lawton, G. M. MacSwiney, F.C.P., R. Montgomery, W. Murphy, J. J. O'Brien, S. Oldham, J. W. Queale, Prof. Quinlan, M.D., J. A. Ray, J. Emerson Reynolds, M.D., Dr. Roche, R. Simpson, J. T. Smallman, Aquilla Smith, M.D., William Smythe, G. Smith, M.D., R. Swayne, Prof. Tichborne, W. F. Wells, jun.

*Edinburgh.*—G. H. Laird. *Exeter.*—A. Hunt. *Galway.*—Prof. Rowney. *Gateshead.*—H. B. Brady.

*Glasgow.*—D. Frazer, E. C. C. Stanford. *Gloucester.*—H. Meadows, W. Stafford.

*Grantham.*—A. G. Gamble. *Huddersfield.*—G. W. Rhodes. *Leamington.*—J. Barnett. *Leicester.*—J. W. Clark.

*Liverpool.*—T. F. Abraham, A. H. Mason, R. Sumner, C. Symes, A. E. Tanner, T. Williams.

*Limerick.*—T. S. Hance.

*London.*—Prof. Attfield, J. Bourdas, F. Bullock, S. M. Burroughs, S. Carter, E. Crawshaw, J. F. Davenport, R. H. Davies, J. Dodwell, F. W. Fletcher, A. W. Gerrard, Dr. J. H. Gladstone, T. Greenish, W. Gulliver, W. E. Heathfield, W. Hills, A. B. Lewiuton, H. Long, N. Maughan, F. Passmore, B. H. Paul, A. P. Penrose, A. W. Postans, J. Robbins, A. L. Savory, H. G. Stacey, C. Umney, J. Williams, J. A. Wink, A. C. Wootton, T. P. Wright.

*Londonderry.*—S. J. Byrne.

*Kilkenny.*—W. Sterling. *Kingstown.*—H. Beunett, F. Meyers.

*Manchester.*—F. Baden-Benger, C. Estcourt, T. G. Gibbons, T. Mather, Prof. Roscoe, L. Siebold, W. Thomson.

*Newry.*—W. R. Hamilton. *Northampton.*—W. D. Mayger. *Oldcastle.*—P. Gaynar. *Shepton Mallet.*—G. J. Cottrill. *Sheffield.*—A. H. Allen, W. Ward.

*Southampton.*—R. Chipperfield. *Swansea.*—W. Morgan. *Warrenpoint.*—R. A. Jones. *Weymouth.*—T. B. Groves. *Whitehaven.*—F. T. Allatt. *York.*—F. Slinger.

*Table showing the Attendances at the Meetings of the British Pharmaceutical Conference since its Foundation.*

| Year | Place | Local | Visitors | Doubtful | Total |
|---|---|---|---|---|---|
| 1863 | Newcastle-on-Tyne (inaugural) | 2 | 22 | — | 24 |
| 1864 | Bath (1st annual) .. .. | 18 | 31 | 11 | 60 |
| 1865 | Birmingham .. .. .. | 35 | 38 | — | 73 |
| 1866 | Nottingham .. .. .. | 46 | 38 | — | 84 |
| 1867 | Dundee .. .. .. .. | 36 | 35 | — | 67 |
| 1868 | Norwich .. .. .. .. | 20 | 38 | 19 | 74 |
| 1869 | Exeter .. .. .. .. | 10 | 49 | 10 | 69 |
| 1870 | Liverpool .. .. .. | 44 | 126 | — | 170 |
| 1871 | Edinburgh .. .. .. | 32 | 84 | — | 116 |
| 1872 | Brighton .. .. .. .. | 36 | 101 | — | 137 |
| 1873 | Bradford .. .. .. .. | 30 | 74 | — | 104 |
| 1874 | London .. .. .. .. | 90 | 85 | — | 175 |
| 1875 | Bristol .. .. .. .. | 38 | 89 | — | 115 |
| 1876 | Glasgow .. .. .. .. | 34 | 142 | — | 176 |
| 1877 | Plymouth .. .. .. | 49 | 88 | — | 137 |
| 1878 | Dublin .. .. .. .. | 50 | 97 | — | 147 |

Exhibitions were held at Nottingham, Norwich, Liverpool, and London. At the first two the numbers were not taken, but 400 visited the Liverpool Exhibition, and 840 that in London.

The Irish Reception Committee held their final meeting on September 4, when a balance-sheet was presented by the secretary, Mr. Hayes. The sum of 244*l.* 17*s.* 6*d.* had been collected, and when all expenses had been settled there remained a balance of 12*s.* 1*d.*, which, on the motion of Mr. Holmes, seconded by Mr. Brunker, was handed over to the Apothecaries' Benevolent Fund. It was mentioned that many visitors had written to Mr. Hayes expressing the pleasure they had derived from their visit to the Emerald Isle. The report of the committee expressed great satisfaction at the appreciation which their efforts had met with. "Your desire," it said to the subscribers, "was to give them a real *Cead mille failthe*, and they as cordially responded, *Erin-go-bragh.*"

## Chloroform.

### *Alfred Henry Mason, F.C.S.*

We have received the subjoined paper, which was first offered the Pharmaceutical Conference and subsequently withdrawn. r. Mason's letter will explain the circumstances of the case.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—Several members present at the sittings of the Conrence held in Dublin having expressed disappointment that y paper on chloroform was not read (as they were interested the subject) have requested me to publish it. Although many the statements have already appeared in your journal I place at your disposal. If you publish it kindly insert this letter.

I believe the paper was *purposely* removed to the bottom of e list, firstly, because it was supposed that trade interests ere involved; secondly, because the original had already been ublished in The Chemist and Druggist; and thirdly, the bject was of such magnitude that the discussion might be o lengthy.

Perusal of the paper will show how far trade interests were volved, and give my reasons for the repetition: the third fficulty was surely in the hands of the President. In reviewg the papers read, the editor of the *Pharmaceutical Journal* lls attention to the fact that the first paper had been read fore the Chemical Society, and published in their journal; other paper had been read at the evening meeting of the harmaceutical Society, and published in its proceedings. With is I leave difficulty No. 2. Surely the subject was of sufficient portance to the members to make it quite as worthy of conderation as the discussion of bogus adulterations or violetwder prosecutions—for if query No. 2 in my paper should ve received affirmation from the medical gentlemen present e importance of query No. 1 would have been evident, and ch an assemblage of scientific authorities was the place to ntilate the subject.

As the matter stands now, from a pharmacist's point of view is of importance that he should, if possible, have some method distinguishing whether he is paying for chloroform prepared om methylic or ethylic alcohol. He should, as a precaution n the meantime) insist upon the source from which the chlororm is obtained being certified upon the label.

If the fear of trade interests is to influence the selection of pers read before the members of the Conference, I am afraid e thing will find its own level.

I take this opportunity of thanking the members present at ublin for the honour they have conferred in electing me a ember of the executive committee.

Apologising for trespassing so far upon your valuable space,

I remain, yours faithfully,

Alfred Henry Mason.

Liverpool, September 6, 1878.

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A PAPER read before the members of the Liverpool Chemists' Association in April last (published in The Chemist and ruggist, May, 1878) gives full information respecting this bstance. I shall not, therefore, take up your time by repitulation here, and I have little to add thereto. But as nsiderable interest has been shown in the question raised, d the subject requires further discussion, I am permitted erhaps a little out of the usual course) to ask for information ntrary to the objects of those gentlemen whose papers have eceded this. I come to learn rather than to teach, and in a eeting composed of medical gentlemen, chemists, and pharacists, and where these professions are more or less combined, trust the subject will be of interest.

I have been astonished to find that an opinion prevails amongst me medical men that methylated chloroform is a sophisticated ticle highly dangerous for internal administration, and in planation of this have been told that methylated chloroform ethylic chloroform to which methylated spirit has been added obviate payment of duty, and thus produce a cheaper subance for external use only. Such an absurd idea is quite fficient to prejudice the medical man against its administraon, and it is in the hope of removing every prejudice against n ultimate product which is identical that I venture to ask our opinion to-day.

Prejudice 1. It is stated in standard text-books, such as Gmelin and Watts, that chloroform prepared from wood spirit is much less pure than that prepared from alcohol.

Methylated spirit is a mixture of 10 per cent. of wood spirit with alcohol. Wood spirit is a crude article often containing large quantities of acetone, and almost always containing some. Any chloroform, therefore, prepared from wood spirit is derived from the acetone present in it.

*Pure* methylic alcohol does not give a drop, or even a smell, in chloroform when treated in the usual way—and why should it? Chloroform prepared from methylated spirit is as truly chloroform as the substance prepared from ethylic alcohol. There is certainly more difficulty in purifying the the former, but it can be purified, and is purified, and when purified no one can possibly tell the origin of the chloroform.

Prejudice 2. It is stated that the administration of so-called methylated chloroform produces a feeling of nausea which is not experienced from ethylic chloroform.

This is a question for medical gentlemen alone to decide, but the fact that Professor Lister and some of the leading surgeons in Edinburgh prefer to use the former should remove this prejudice.

The British Pharmacopœia prescribes the use of ethylic alcohol in the manufacture of chloroform, and gives the sp. gr. 1·490, but it will be found in practice that, when the prescribed formula is completed, the specific gravity will be 1·497 at 60° Fahr., but this is not pure chloroform, especially if Dr. Davy's molydic acid test is to be a standard. Most of the samples manufactured by this process are affected by this test: in some instances they are not.

The specific gravity of pure chloroform is atleast 1·500; there must, therefore, be present a substance of a lower specific gravity than chloroform in the Pharmacopœia product, and as the chloroform is distilled off sulphuric acid, the question arises whether ether may not be present as a dilutant. This is so far merely a conjecture, and I have not had opportunity to satisfy myself on the point, further than that a specimen of pure chloroform reduced to 1·497 specific gravity by ether did not give the coloration by Davy's test.

Absolutely pure chloroform is quickly decomposed, and in my original paper I stated that it was found by experience that the addition of 1 per cent. of absolute alcohol prevents this decomposition, and this admixture reduces the specific gravity to 1·497, which is the specific gravity of the chloroforms of commerce, manufactured by Messrs. Duncan, Flockhart & Co., and Messrs. Macfarlan & Co., of Edinburgh. My statements have not been repudiated by the manufacturers, although the editor of The Chemist and Druggist invited them to discuss the question, and therefore I take this as an established fact; further, since the publication of the paper referred to the manufacturers have added to their labels, that they guarantee their so-called methylated chloroform *pure*, and also that it answers all the requirements of the British Pharmacopœia.

Further, I take it that the compilers of the British Pharmacopœia morally allow this addition by fixing the specific gravity so low, and that they consider such an admixture does not constitute an adulteration.

I therefore ask:—

1. Is there any reliable method of discrimination, chemical or physical, between pure chloroform and so-called methylated chloroform?

2. Is there evidence of any difference whatever in the physiological action of pure chloroform obtained from ethylic or methylic alcohol?

3. Is there any reason why the use of ethylic alcohol should not be made optional in the next edition of the Pharmacopœia, considering that equally pure chloroform may be produced from other substances more or less costly?

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## THE BRITISH ASSOCIATION.

THE recent meeting in Dublin, which was the 48th of the series and the third occasion of assembling in that city, has not made any sensational effect on the world at large, the inhabitants of which have become strangely callous to the most startling propositions which scientific heroes can announce. It is an evident fact that we are moving on rapidly; we are rushing past the old landmarks, scarcely even deigning to notice them; we are adopting entirely new views of the universe, differing not merely from those which our fathers held, but even from those which we ourselves held a few years back; and we are not at all astonished at the revolution. The British Association meetings serve to show to common people how vast are the stores of learning, and how magnificent are the conquests of science accomplished year by year, in a quiet, unobtrusive way, by an army of workers who are but little heard of in the daily papers. Most of them are men who have not learned how to work the "paragraph" business, and their labours pass on unchronicled but not resultless; it is amazing when we come to think of it on what a very few men comparatively does the movement of the world in intellectual and material advancement depend.

### The President's Address

Was delivered in the splendid examination-hall of Trinity College to an audience composed almost equally of ladies and gentlemen, filling entirely the spacious floor, and numbering not less than a couple of thousand. Mr. William Spottiswoode is, no doubt, a man well worthy of the honours to which he has attained. He not only holds the high position of President of the British Association, but is also the President Elect of the Royal Society of England. These are extraordinary coincident positions for any one man to occupy; but when it is remembered that they are held by a man to whom science has been only a parallel occupation to business, it will be evident without proof that to attain such eminence a wonderful resource of work and patience must have been needed. It was very much to be regretted that the delivery of the address should have been so complete a failure. Not a tenth part of the audience could hear enough to get a connected notion of what it was all about, and the tendency naturally was to depreciate its character. But those who studied it on the morrow, and who got beyond the long and wearisome story of the Association, which occupied nearly half of the address, and the string of platitudes with which the author went on to introduce his special subject, mathematics, were well rewarded with a philosophical study, close in its reasoning, broad and bright in its suggestiveness, novel in its theory, and eloquent in its clothing. As we understand Mr. Spottiswoode he claims that not only is mathematics the necessary completer and finisher of all other sciences strictly so-called, but it is, rightly understood, the instrument which guides, and directs, and develops the imaginative faculties and the arts which give so much charm to life. Music, painting, sculpture, architecture, and even poetry he would class as direct expansions of the mathematical idea. Nay, more than this, in its teaching of the perfect harmony and precision of all things within our ken, and in the comprehension of the limits of its powers, he would assert that it teaches the truest philosophy and the loftiest theology. In the course of his address, while referring to calculating machines and the like, the President made a remarkable revelation respecting a new invention of which we shall doubtless hear more. It appears that Professor James Thomson has recently constructed a machine which, by means of the mere friction of a disc, a cylinder, and a ball, is capable of effecting a variety of the complicated calculations which occur in the highest application of mathematics to physical problems. By its aid it seems that an unskilled labourer may, in a given time, perform the work of ten skilled arithmeticians. The machine is applicable alike to the calculation of tidal, of magnetic, of meteorological, and perhaps also of all other periodic phenomena. It will solve differential equations of the second and perhaps of even higher orders. And through the same invention the problem of finding the free motions of any number of mutually attracting particles, unrestricted by any of the approximate suppositions required in the treatment of the lunar and planetary theories, is reduced to the simple process of turning a handle.

### The Chemical Section

Was presided over by Professor Maxwell Simpson, M.D., F.R.S. His address was an argument for the more general recognition of chemistry in the curriculum of ordinary education. He claimed that both as regards its practical teaching and as a mental discipline chemistry was the chief of the sciences. First, it taught us what we ought to know of the familiar objects around us, and, secondly, it trained the student to courage, resolution, truthfulness, and patience. Urging original work, Professor Simpson held up the example of Germany, where the professorships were usually the reward of original investigation, and he thought our great universities should give more encouragement to such research by giving their fellowships as a prize rather for the advancement of human knowledge than for the display of a retentive memory, or the power of assimilating other men's ideas.

Among the papers in this section

### Coal Gas

Was reported on by Dr. Wallace and Professor Dittmar, of Glasgow, and Mr. Wills, Greenwich. It appears from their report that while the Scottish companies usually give gas of 26-candle power, Londoners have to put up with an average quality of 16 candles, Liverpool, Manchester, and Carlisle get 20 candles, while most of the towns and cities of England and Ireland have to be satisfied with a 14-candle light. In reply to Professor Roscoe, Dr. Wallace said that globes round gas diminished the light about 10 per cent.

Mr. Alex. S. Wilson, M.A., of Glasgow, in a paper on the

### Nectar in Various Flowers,

Reported the proportions of sugar he had found in many, and calculated that in order to obtain 1 kilo. of sugar 7,500,000 distinct flowers must be sucked. As honey contains roughly about 75 per cent. of sugar, a bee has thus to make about two-and-a-half millions of visits in order to collect a pound of honey. It is rather a curious fact that nectar should contain cane sugar, seeing that honey never does, indeed, were a vendor to sell honey containing cane sugar he would probably be prosecuted under the Adulteration Act. A change must, therefore, take place while the sugar is in the bee's possession—possibly through the action of the juices with which it comes in contact while in the honey-bag, which is an expansion of the œsophagus of the insect. As nectar is acid in its reaction, it is, however, possible that the process of inversion may take place spontaneously.

### Milk and its Adulteration

Was the subject of a paper by Mr. Ernest H. Cook. After detailing the variations to which even pure milk was subject, the breed, the season, and the food causing differences (Guernsey cows, he said, yielded the most and the best milk), Mr. Cook advocated two standards for milk to be sold at different prices, drawing the line, say, at 12 per cent. of solids, or of 9 per cent. of "solids not fat." Dr. Cameron, of Dublin, who said he had had great experience in milk analysis, gave it as his opinion that pure milk never contained less than 11½ per cent. of solids.

Mr. William Thompson, F.R.S.E., described a process he had contrived for

### The Detection and Estimation of Mineral Oil

In animal, vegetable, or fish oils, with which he said it was often mixed to form a lubricating oil. He boiled some of the sample with an alcoholic solution of caustic soda, which converted all the animal, vegetable, or fish oils into soap. This was then mixed with sand and treated and washed with petroleum spirit, and distilled at a temperature under 190° Fahr., which dissolved out the mineral oil, leaving the soap insoluble. The spirit is then distilled off from the spirit solution of mineral oil at a temperature not exceeding 220° Fahr., and the residue of mineral oil weighed and calculated on the weight of the original mixed oil taken.

### On the Detergent Power of Soap.

Prof. W. Stanley Jevons read before the Mathematical Section of the British Association a paper on the "Pedetic Action of Soap." Pedesis or the Brownian movement is the name applied to the different movements observed when microscopic solid particles are mixed with fluids, and by which they are kept in suspension. Professor Barrett and some other physicists believe that the movement is due to surface tension while Professor Jevons thinks that chemical and electro-motive actions can alone explain the long-continued and extraordinary motions exhibited by minute particles of almost all substances under proper conditions. Soap considerably reduces the tension of water in which it is dissolved without much affecting, it is said, its electric conductibility. If, then, pedesis be due to surface tension, we should expect the motion to be killed or much lessened when soap is added to water. But it is found that with a common solution of soap the pedetic motion becomes considerably more marked than before. This result has been observed, not only with china clay and some other silicates, but also with such comparatively inert substances as the red oxide of iron, chalk, and even the heavy powder of barium carbonate. The last-named substance, one those which we should least expect to dance about of its n accord, gave a beautiful exhibition of the movement when xed with a solution of about 1 per cent. of soap, and wed with a magnifying power of 500 or 1,000 diameters.

The correctness of this result was also tested by observing suspending power of soap solution compared with water. If ittle china clay be diffused through common impure water, it, for instance, of the London water companies, the greater t of the clay will soon be seen to collect together in small cks, and fall to the bottom in two or three hours, the water ing almost clear. However, if about 1 per cent. of soap be solved in the water, the behaviour of the clay is quite ferent. The larger particles soon subside, but the smaller es remain diffused through the liquid for a long time, giving milky appearance, quite different from the flocky and grainy pearance of the common water; if 1 per cent. of sodium bonate be dissolved in common water, and china clay be xed therewith, the subsidence of the clay is still more rapid. Professor Jevons considers these facts give a complete explation of the detergent power of soap; otherwise why should comparatively neutral soap be better than the alkaline carnate by itself? The hardness of impure water arises from vast decrease of pedesis due to the salts in solution. Hence inferior cleansing power of such water. This explains, too, y silicate of soda is now largely used in making soap; for cated soda is one of the few universal substances which rease the pedetic and suspensive power of water.

### The Geographical Section

always the most popular of all, and it seemed to present te its usual share of attractions at Dublin. Sir Wyville ompson, the President, spun, and we may say spun out, the ll-worn yarn of the *Challenger*, but he has not yet suc- ded in making the results of that costly expedition appear rthy of its promise. It appears, however, that the ac- mulated stores of knowledge acquired are still being "ar- nged and digested," and as we believe some eminent scientific ntlemen are in receipt of a handsome salary until that is ished, it is probable the process will yet occupy a consider- le period.

Lieutenant Kitchener, of the Palestine Exploration Society. thered a large company to hear his report of the "Survey of lilee," which was especially interesting, but rather in its storical than in its geographical details.

Captain Burton read a paper on Midian, which he believes ll presently awaken from her trance, from her sleep of ages. le offers to the world not a mine, but a mining region some 0 miles long, with an inner depth as yet unknown; and what e ancients worked so well the moderns could work still tter. Let them look forward to the development of her ineral wealth under the fostering care of European, and espe- lly English, companies.

Dr. Phene treated on Cyprus; Dr. Rae and Dr. Moss, officers the Arctic Expedition, contributed essays referring to those gions, and at the conclusion of the paper by the latter. ptain Dyer, R.N., turned the thoughts of the section into a s frigid current by referring to his early recollections of reenwich Hospital, in which he was born, concluding with a ive of a song, which he sang in the tones of a true British ilor, to the wonder and amusement of all present.

Mr. H. M. Stanley was present during the meetings. but did t contribute any paper.

In the department of Economic Science Professor Jevons ntributed a curious paper on

### The Periodicity of Commercial Crises,

nd its physical explanation. Various reasons, such as wars, ade unions, luxurious living. &c., had been given as explanaons of the now constantly-recurring depression of trade. ich explanations he (Professor Jevons) did not consider satisctory. Depression of trade had occurred during the present ntury with remarkable regularity at intervals of ten years. r John Herschel had attempted to find a connection between rtain meteorological phenomena and the price of corn in urope. If we trace backward from 1866, when a very great pression of trade took place, it was to be observed that in 857 an equally severe commercial crisis took place both in ngland and the United States. The year 1847 was memorble for the excessive number of bankruptcies, and in 1839 nd 1836 crises took place in England, while in 1837 the crisis ok place in the United States. Some exceptional cause appeared to have broken up the crisis into minor crises. From 1837 they regressed eleven or twelve years to the great bubble year 1825. The paper went on to show that during the last 165 years there had been sixteen great commercial crises at intervals of about ten years, and concluded by stating that the fact of the periodicity of commercial crises was so strong that it could not be doubted, and the question of a physical cause was only a matter of speculation.

A discussion followed which seemed to indicate that most of the authorities present were disposed to trace back these commercial crises to an extra supply of spots on the sun, which ar supposed to influence harvests.

During the meeting Mr. G. J. Romanes, M.A., delivered to a popular audience a very interesting lecture on

### Animal Intelligence.

He illustrated his remarks by quoting incidents which he had observed in connection with his own dogs, and described at some length observations which had been made on neglected deaf mutes. His general conclusion that the only difference in kind between animal intelligence and human intelligence consists in this—that animal intelligence is unable to elaborate that class of abstract ideas the formation of which depends on the faculty of speech. In other words, animals are quite as able to form abstract ideas as we are, if under abstract ideas we include general ideas of qualities which are so far simple as not to require to be fixed in our thoughts by names. Sir John Lubbock, in proposing a vote of thanks to Mr. Romanes, expressed a strong desire to know not only what Mr. Romanes thought of his dogs, but also what the dogs thought of Mr. Romanes.

Professor Dewar, of Cambridge, also gave a popular lecture on

### Dissociation,

Or modern ideas of chemical action. His lecture was rather a physical than a chemical one, and was illustrated by such experiments as the liquefaction of carbonic acid gas by a pressure of about 60 atmospheres, and the boiling of a block of ice in a vessel of ether.

### The Hospitality

Offered to the members by the vice-regal, municipal, and scientific authorities was enormous. The excursions arranged were numerous, and all highly successful; the opening conversazione was one of the most brilliant ever held, and we may mention that the elaborate arrangements by which it proved so successful nearly all fell upon Mr. R. J. Moss, as the secretary of the Royal Irish Society, a gentleman whose name is so well known to our readers, and especially to the students of chemistry who, through this journal, have been brought into communication with him. One of the incidents of the meeting was a breakfast at the Zoological Gardens, which was enlivened by a characteristic speech from the ever genial secretary, the Rev. Dr. Haughton. In a serio-comic strain that gentleman bewailed the effect on his moral nature which an association with the trade in live animals had produced. He would leave it to moralists to say why persons who are ordinarily truthful and honest in dealings about soap, candles, tobacco, timber, or slates become utterly demoralised when engaged in the barter of live animals. For himself, he said: "I can only say that I was virtuously brought up, had the advantage of a pious mother, and can still repeat my catechism; but I feel, as the result of my twenty years' connection with this garden, that partly from the pinch of poverty, and partly from the demoralisation connected with the sale of animals, my moral sense has been dwarfed not a little." One specimen that he gave of the means he had had to take to raise money for the gardens was very amusing. "The treasurer and I," he said, "went as a deputation to the Bank of Ireland, and we asked for a loan of 200*l*., which, to our great surprise, was refused. A happy thought then occurred to me—to offer to deposit a live tiger with the bank as a pledge. One of the many financial crises through which these gardens have passed will give you some idea of the extraordinary shifts to which the secretary and treasurer have been occasionally put to provide the necessary funds for feeding their large stock of pets. We had a leopardess which had been caged in the gardens for well-nigh seventeen years. She was in excellent health and condition for an animal of that age. Gentlemen, I advertised that leopardess for sale, and named her price 30*l*. I received several offers of 25*l*., but wrote in reply that the market for leopardesses was rising, and that those interesting animals no longer continued to look down, and that my next advertisement would raise the rate to 35*l*. Upon this I was favoured with sundry offers to take the leopardess—all of which offers except one contained a very unpleasant inquiry about the animal's age. But by the blessing of Providence one letter made no allusion to this rather delicate subject. I sent off the animal at once, and received on her arrival a single line by telegraph, expressed in words which showed me that the sender, if an Englishman, must have had a strong dash of Irish blood in his body. The words were these:—'Mr. So-and-so, animal dealer, to the Rev. Dr. Haughton' (every one is particular about the reverend in addressing me)—'She is as old as the devil.' Some time ago, considering the danger to my morals involved in filling the office of secretary, I had some thoughts of resigning it, and I consulted with a clerical friend in whose piety and wisdom I had much confidence. He told me it was a difficult case—not provided for in the books. He thought if my health allowed it I might keep the place for some time longer, but he advised me, as a friend, to retire from it for some time before death, to give time for repentance."

### THE DARWINIAN THEORY

Is still the favourite *casus belli* with the combative professors. The Rev. Professor Haughton, of Dublin, a recognised humourist, made the best hit against it in opening the proceedings of the mathematical section. Section A (the mathematical) he said, was the premier section. It extracted for chemistry and geology the secrets which could not be obtained by the mere brute force of experiment. Section A was bitterly attacked by the geologists. The question at issue between them was the question of duration. The geologists were very extravagant about time. They had no economy at all in that matter. They would not even take the trouble of considering how much time they actually required. Mathematicians were apt to have differences with them upon this point. One mathematician said to them—How much time do you require? Will ten millions of years do? Another, more liberal, offers them a hundred millions. But the geologists cried out, "Oh, nonsense! We must have a billion billion of millions of years at least; how otherwise can man be developed according to Mr. Darwin's theory?" Professor Haughton quite agreed with the geologists that it would take all that time to develop man according to Darwin's theory.

Some interesting papers were read in the

### ANTHROPOLOGICAL

Department of the Biological Section under the presidency of Professor Huxley. Professor Flower advocated measurement of the skull as a means of gauging capacity in preference to the weight of the brain. Referring to comparative measurements of different races, he said the Beddahs of Ceylon he had found to have the smallest skulls. The Laps and Esquimaux had very large skulls. The average negro skull was larger than that of the average Hindoo. He could tell nothing about Irish skulls, for there was not one in any London museum. The President suggested that they might have all been broken.

Dr. H. Muirhead read a paper on Left-handedness, in which he asked, Why was man right-handed? His explanation only pushed the difficulty a step back. He thought it depended on which half of the brain took the lead. Left-handedness once begun in a family was likely to run in it. It was very common in the tribe of Benjamin. It was a very curious fact that left-handed people had the left foot about ⅛ of an inch longer than the right.

In the anatomical department Mr. Romanes read a paper to prove that

### JELLY FISH

Are endowed with a nervous system. Among other experiments he told how he had made some drunk by pouring some whiskey into a vessel in which some were kept. The effects were most demoralising. The previous sober swimming motions became highly excited and hilarious, and the animals tumbled about in a rollicking manner. Later on a drowsiness began to come over them, and eventually they subsided to the bottom of the vessel in a state of beastly drunkenness. They recovered rapidly when removed to fresh water.

### THE NEXT MEETING

Will be held at Sheffield under the presidency of Dr. George J. Allman, F.R.S., noted as a biologist, and the meeting of 1880 will take place at Swansea. The total number who had taken tickets for the Dublin meeting reached 2,578, placing this occasion sixth on the list of meetings which had yet been held.

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## FORMULÆ OF SECRET MEDICINES.

*(Continued.)*

*The formulæ given below are translated (by special permission of the author) from a German collection compiled by Mr. Edward Hahn, Apotheker. The names following most of the formulæ are those of the authorities quoted for the analysis. The weights are almost invariably given in metric denominations. A gramme is equivalent to 15½ grains. The prices quoted are the nearest English equivalents to the original retail price.*

GESUNDHEITSSEIFE—SANITARY SOAP (J. Oschinski, Breslau).—A clear brownish-green gelatinous mass, of 7 parts soap, 5 parts resin, 88 parts brandy, with some camphor, and oils of lavender and rosmary. 120 grammes. 1*s*.—*Hager*.

GESUNDHEITSSENFKÖRNER, WEISSE—WHITE SANITARY MUSTARD SEED (Didier, Paris).—Ordinary sifted white mustard seed. 500 grammes. 1*s*. 5*d*.—*Hager*.

GESUNDHEITS-SPEISE-GEWÜRZ—SANITARY CULINARY SPICE (J. H. Redeke).—For hæmorrhoids, hypochondria, rheumatism, mumps, scrofula, inflammation of the eyes, chlorosis, indigestion, and stomach troubles. 3·4 grammes flowers of sulphur. 2·5 grammes gentian powder, 3·1 grammes powdered black mustard seed. 1*s*. 9*d*.—*Hager*.

GESUNDHEITSTRANK FÜR SCHWANGERE—SANITARY DRINK FOR PREGNANT WOMEN (Lenhard, Quedlinburg).—Consists in reality of an infusion of senna leaves, with sulphate of magnesia dissolved in it. Some harmless herbs, such as mint and hyssop, are subordinate ingredients.—*Wittstein*.

GESUNDHEITSZUCKERKUCHEN—SANITARY TABLETS (Pavel & Co., Berlin).—Tablets of sugar sprinkled with concentrated tincture of rhubarb and sanitary liqueur.—*Hager*.

GETREIDE, VERGIFTETES—POISONED WHEAT (Gibbon, Wolverhampton).—For destroying rats, mice, &c. Rye saturated with a solution of strychnine. 100 grammes, 5*d*.—*Wittstein*.

GICHTBALSAM—GOUT BALSAM (Dr. Lavilet).—This gout balsam of Albin Müller's is an external preparation made fro 5 grammes tinct. cantharides, 5 grammes ammonia, 40 grammes spirit, 35 grammes castile soap, ·5 gramme camphor, ·25 gramm rosmary oil. 7*d*.—*Hager*.

GICHTBALSAM (Apotheker Radig, Berlin).—A mixture of rape oil and oil of pine (ol. pini), shaken with birch tar and poured off clear. 15 grammes, 1*s*. 3*d*.—*Hager*.

GICHTBALSAM (Seewald, Hochholz).—A pale greenish-yellow fluid, resembling an ethereal oil, and floating on a small quantity of colourless watery liquid. Between the two liquids is a yellowish white layer of a solid substance (sulphur). The balsam has a sharp penetrating odour of sulphurous acid and ethereal oil, and an aromatic acid taste. It first reddens and then bleaches litmus paper. It is made by distilling 4 parts turpentine oil with 1 part concentrated sulphuric acid. 30 grammes, 1*s*. 1½*d*.—*Trautwein*.

GICHTELIXIR—GOUT ELIXIR (J. Gulielmo, Landau).—An approved remedy for gout and gouty pains of all kinds, rheumatism of the muscles and joints, called witches' shots, &c. It consists of a solution of 1·5 grammes quinine sulphate, 7·5 grammes chloral hydrate in 30 per cent. spirit of wine, coloured with syrup of orange peel. A bottle containing 130 grammes, 8*s*.—*Hager*.

GICHTELIXIR (Herlikofer, Gmünd, Wurtemberg).—A mixture of 1 part tinct. sem. colchici, 1 part tinct. bulbi colchici, and 2 parts rectified spirit. 80 grammes, 6*s*.—*Hager*.

GICHTMITTEL—GOUT CURE (Gippert).—Undried soap, with a equal quantity of weak spirit, coloured with alkanet and some ammonia and oil of rosmary, badly incorporated. 80 grammes, 3*s*.—*Hager*.

GICHTÖL—GOUT OIL (J. Egener & Frey, Mayence and Rotterdam).—It is composed of 35 grammes water impregnated th guano, 60 grammes petroleum, 20 grammes oil of turpen-e, 15 grammes ammonia, and 10 grammes spirit. 4s.—hädler.

Gichtpflaster oder Gichtleder—Gout Plaster or Gout :ather (Dr. Blau, Langeuberg-by-Gera).—Turpentine-plaster. dinary turpentine spread on pieces of oiled silk the size of e hand. 8 pieces, 3s.—*Hager*.

Gichtpillen — Gout Pills (Lartigue, Bordeaux).— 5 gramme pills rolled in lycopodium, and made of 2 parts wdered colchicum seeds, ½ part sugar, and sufficient mucilage make a mass. 24, 8s.—*Wittstein*.

Gichtpulver—Gout Powder (Louis Wundram).—3 powders, ch of 1 gramme flowers of sulphur and ·3 gramme sugar. . 3d.—*Hager*.

Gichtringe — Gout Rings—Are iron rings, the ends of hich are furnished with strips of copper and zinc.—*Hager*.

Gichtsalbe—Gout Salve (L. Blüber, Plagwitz).—Also rviceable for pains in the chest and loins. Nothing but dinary writing-paper, on which is spread a mixture of 2 parts rpentine and 1 part pitch. 60 grammes, 3s.—*Wittstein*.

Salbe gegen Gicht, Rheuma, &c.—Salve for Gout, Rheu-atism, &c. (Georg Krätz, public executioner, Zeitz).—Hog's rd, 60 grammes; pine oil, 5 grammes; camphor, 1 gramme. .—*Schädler*.

Gichtsalbe oder Gichtpflaster—Gout Salve or Plaster . Püttmann, Cologne).—88 parts clear turpentine, 10 parts ack pitch, 2 parts wood-tar. 50 grammes, 3s.—*Hager*.

Gichtspiritus—Gout Spirit (Dr. Blau, Langenberg by era).—Ground pepper and common salt, of each, 15 grammes; pirit, 180 grammes; vinegar, 50 grammes; spirit of rosmary, pirit of wild thyme, of each, 25 grammes; digest and strain rough linen. 3s.—*Hager*.

Gicht und Krampf Stillender Balsam—Balsam for re-ieving Gout and Cramp (Lampert).—45 grammes of a rose-ed, slightly soapy and aromatic-tasting fluid, containing, in 00 parts, 1 of oils of thyme, bergamot, cloves, and cinnamon; of soda soap, 70 alcohol, 23 water, and traces of aniline red.—*ittstein*.

Gicht und Rheumatismus.—Gout and rheumatism cured in hree hours, without the exhibition of external or internal emedies. Practised by Kriete, of Berlin, the only possessor of he secret up to the present time. The extraordinary means em-loyed are as follows:—The fresh urine of the patient is heated ith various manipulations in an earthern pot for three hours n a Friday. It is then to be buried in silence—with certain ceremonies (or hocuspocus) which are minutely described—in he dampest cellar that can be got at. The pamphlet which ontains these directions consists of 18 octavo pages, and costs s.—*H. Ihls*.

Gicht und Rheumatismus-Mittel—Gout and Rheumatism ure (Director D. Besser, Berlin).—Recommended as a great heal-all. It is a rough powder of amber, frankincense, lavender flowers, camomiles, and juniper berries. 2s.—*Schädler*.

Gicht und Rheumatismus-Mittel (Dr. Laville, Paris).— 1. Gichtliqueur—Liqueur Antigoutteuse—Laville's Gout Tincture. Spanish wine, 800 grammes; strong spirit, 100 grammes; water, 85 grammes; colocynth extract, 2·5 grammes; quinine and cinchonine, 5 grammes; calcium chloride, 4·5 grammes (or, according to Hager, colocynth extract, 3 grammes; chinoidin, 6 grammes; tartaric acid, 2·5 grammes). 2. Gichtpillen—Gout Pills. Extract of the seeds of the winter cherry, freed from the capsules, 15 grammes; waterglass, 5 grammes; and sufficient vegetable powder to make pills weighing 3 decigrammes. (The extract of winter cherry should be made by crushing the ripe fruits of the alkekengi in limewater, extracting with spirit, and evaporating to a suitable consistence.) 20 francs, or, in Germany, 21s.—*Hager and O. Henry*.

Gicht und Rheumatismus Spiritus—Spirit for Gout and Rheumatism (Dr. Hoffmann).—9 parts petroleum ether, and 1 part French oil of turpentine. 3s. a bottle.—*Hager*.

Gicht und Rheumatismus Tropfen—Gout and Rheumatism Drops (Dr. Hoffmann).—45 grammes colchicum wine and 15 grammes diluted spirit. 2s.—*Schädler*.

Gichtwatte—Gout Wadding (Dr. Pattison).—For gout, hematism, &c. Badly-glazed wadding, coloured red on one side with a spirituous extract of sandalwood, which is perfumed with balsam of Peru and benzoin. A packet, 20 centimetres long and 13 millimetres broad, 6d.—*Hager*.

Gichtwatte Aromatische—Aromatic Gout Wadding (C. G. Altgelt, Crefeld).—A piece of common wadding, on one side of which is spread a very weak spirituous solution of tar, coloured with violet lake. A large packet (32 centimetres long and 5 centimetres broad), 9½d.; a small packet (24 centimetres long and 5 centimetres broad), 6d.—*Hager*.

Gichtwein—Gout Wine (J. M. Müller, Coburg).—Common white wine, to which is added about $\frac{1}{5000}$ part of tartar emetic and infusion of squills. 4 bottles, 34s.; 3 winebottles, 36s.—*Hager*.

Gichtwolle—Gout Wool (Apotheker Neuenberg, New Gersdorf).—Carded wool, perfumed with camphor and agreeable oils.—*Schädler*.

Gift gegen Ratten, Mäuse, &c.—Poison for rats and mice. (Ries Guttmann, Pesth).—A paste of phosphorus with rye-and-pea-meal, sometimes mixed with litharge or red lead, and perfumed with anise oil. 130 grammes, 2s. 5d. *Hager and Wittstein*.

Gift gegen Ratten und Mäuse (Franz Träger, Hardheim). —Coarsely-powdered cayenne pepper (Fructus capsici annici).—*Apoth. R. R. in B.*

Giftfreies Mittel gegen Ungeziefer, &c.—Non-poisonous Vermin-killer (Schlüter, Richter, and others).—Are pastes of bitter almonds with wheat-meal, groats, and sugar.—*Schädler*.

Ginsa—An External Regenerating Extract (Dr. J. C. F. Romunä).—A radical cure for the consequences of onanism, nervous and rheumatic headache, and even long-standing migrain, used as a local wash. It is a mixture of 5 grammes oil of thyme, 10 grammes oil of rosmary, 3 grammes oil of lavender, 2 grammes juniper oil, 400 grammes of spirit (90 per cent.). 10s.—*Hager*.

Girondin (Jos. Meyer, New York).—A disinfectant. A clear brown fluid, sp. gr. 1·25, and containing 29·7 per cent. of solid matter. This contains 25 per cent. sulphate of zinc, and 1·4 per cent. sulphate of copper. It removes evil smells only partially.—*H. Endemann*.

## NOTES FROM GREECE.

By Professor Xavier Landerer, Athens.

Grecian Camomiles.—As early as the month of March the camomiles are flowering in Greece and the Levant. They are fragrant, aromatic plants, and are grown in pots as ornaments. Thousands of kilograms could be collected and exported if there were a European demand for them. They can be dried in two or three days by the sun's heat alone, and their collection and exportation would be a profitable undertaking for a German botanist, or "rhizotomist," as Hippocrates dubbed the herb-gatherers. Hundreds of thousands of kilos. bloom and are wasted. Poor women and children employ themselves in collecting them, and sell them to the druggists for 15 or 20 leptas an okka (1¼d. to 1¾d. for about 2¼ lbs.). Two okkas of the fresh flowers weigh about one when dried. After their arrival in Germany they should be redried to prevent the growth of mould. It will be well if this note should originate an industry. If the fragrant Grecian camomiles were introduced to European pharmacies, no patient who had used them once would ever use any others. The Macedonian *Flores Tiliæ*, or Linden flowers, are also unusually fragrant. I hope these words will not be "*Vox clamans in deserto*."

Greek Wines for England.—Fortunately for the wine-drinkers of Germany, many of the best Greek wines have been introduced there, and are sold in great quantities under the title of "Griechische Weine" in many cities, such as Frankfort, Leipsic, and Dresden. Much testimony exists to the excellence of the wines of Corinth, of Athens, of Eubœa, and of Santorin.

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* According to Sibthorp and Smith's *Flor. Græc. Prodrom.* 17 species of *Anthemis* are found in Greece and the Greek islands. The *A. nobilis*, by the same authority, does not grow there. T. von Heldreich in his "Nutzpflanzen von Griechenland" does not mention that any of the species are used for any purpose in Greece.—Ed. C & D.

The last is known under the name of Komandaria, Vino di Baccho, or Wine of the Night. All these wines are rich in tannin and phosphatic salts. They aid respiration and produce bone tissue, and for this reason have been introduced in hospitals, where they have been used with great success. All Greek wines are made from the pure juice of the grape, without artificial colouring, falsification, or sophistication of any kind, and their introduction would probably be of great commercial interest. The okka of 2¼ lbs. can be bought for 60 to 80 leptas (*5d.* to *7d.*), and the best sorts at a franc. Besides the wines of Greece those of the islands of Samos and Cyprus are excellent, and are sold under the names of Moskatos, Wine of Cinnamon, or Brusko. The excellent wine of the island of Santorin is called Vino Santo, Wine for the Ladies, Wine of the King. All these wines contain between 10 and 19 per cent. of spirit, and are worthy of the attention of the druggist in England. The following are the names of some Greek manufacturers:—Trippos (Corinth), Kassabetgy, Solon, and Inzklopulos (all of Athens), and of the wine of Santorin, De Kigallas.

A **New Industry.**—Because of the bad oil-pressing machiney used in Greece (neither hydraulic nor steam-presses are known) the olive cake which remains contains 3, 4, or 5 per cent. of oil. This residue, still rich in oil, has from time immemorial been wasted—thrown on the fields as food for asses, used to fatten swine, or even burnt for fuel in making the oil. By some makers this 3 to 5 per cent. of oil is now extracted by means of carbon bisulphide. When the latter is distilled away an oil remains, which is called "Pyrenelaion," and is used for making soap. The pyrenelaion is yellowish-brown, and the soap made from it the same colour, or greenish, but it washes well, and by the washerwomen is preferred to the white Cretan soap, which is often mixed with a white powder called pylos.* When this new method of extraction is introduced in all parts of Greece, and in the oil-producing islands belonging to Turkey (Mitylene, Chios, Crete) millions of kilogrammes of this oil will be annually produced, which, under the old system, would be wasted.

**Gum Ladanum.**—The labdanostirion is the instrument used by the Cretans and Cypriotes for the collection of ladanum. It is drawn through shrubs of the Cistus roses (called by the Arabs "Ladun"), and the resin is scraped from the leathern straps attached to it. Their warlike atmosphere makes the collection of ladanum with this instrument rarer every year, both in Crete and Cyprus. The greater part found in the market at the present day is *Ladanum barba.* The resin exuding from the "Cistus roses" (*C. ladaniferus*, *C. villosus*, *C. indicus*, *C. salvifolius*) adheres to the tails of the sheep and the beards of the goats which graze on these plants. These parts are sometimes cut off, and the resin is then melted out of them. All the Grecian (? that sold in Greece) is adulterated by melting with it powdered mastic. All sheep or goatherds are bound to deliver to the farmer so many okkas of ladanum, or, in place thereof, a certain number of beards and tails, or 30, 40, or 50 grōssiă or piastres. The Cretan ladanum is in shape like a snake coiled up; the Cyprian is in ingots.

[The word ladanum, otherwise written labdanum and laudanum, is thought by some to be the origin of our word laudanum, but the connecting ideas have never yet been explained. The resin is official in the Pharmacopœias of Belgium (1854), Spain, and some others. In the time of Dioscorides it was collected by combing the beards of the goats. In Tournefort's "Voyage in the Levant," made about the year 1700, is an engraving of the instrument used in Crete for the collection of laudanum. In his communication to us Professor Landerer gives a rough sketch of that now used. Tournefort represents it to be an instrument much like a hay-rake, with a double or triple row of long leather straps taking the place of its teeth. The cross piece carrying the straps is strengthened by a bow of wood attached to its ends and to the handle. Professor Landerer's differs from this in various respects. To a long handle is affixed a curved piece of wood, like half a barrel-hoop with the ends pointing towards the holder. Three thin parallel rods pass across the handle, and are fixed at each end to the hoop, which they help to strengthen. A number of long straps hang down from each of these rods, and also from the segment of the hoop cut off by the shortest rod. The instrument is something like a rake with three heads at some distance from each other, with their ends united by the half-hoop. Some authorities believe that Cyprus owes its name to "kopfer," the Hebrew title of the *Cistus Creticus*—Ed. C. & D.]

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## THE PARIS EXHIBITION.

(SPECIAL REPORT.)

**Messrs. Forster & Gregory** make a specialty of chemicals specially adapted for the use of indiarubber manufacturers, and as a consequence, devote a large portion of their case to this department. We learn that in the processes of the manufacture just mentioned several months sometimes elapse before the results of the action of any given chemical manifest themselves. If anything has failed or gone wrong, it is then too late to correct them, and the goods are irrevocably damaged. Messrs. Forster & Gregory guarantee the action of their indiarubber chemicals on indiarubber goods of all kinds. Besides these special goods we noticed a somewhat full series of hypophosphites and valerianates. Valerianates of in zinc, ammonium, sodium, potassium, and amyl, are shown, and with them the acid itself, and the amyl alcohol from which it is prepared. Many of these are more soluble in cold than in hot water, so that heating a solution saturated at a low temperature causes a precipitate which sometimes redissolves on cooling. Sodium valerianate is one of the exceptions, for its hot saturated solution gelatinises when cold. Both valerianates and hypophosphites have been taken up with such eagerness by modern Athenians, who spend their time in telling or hearing of something new, that many feel compelled to regard their medicinal claims with considerable suspicion. But it is quite certain that, however much they may be contaminated with quackery, their profitable nature is not lessened. Dr. Churchill is responsible for the introduction of hypophosphites into medicine, and twenty years ago they were so little known that it was then thought worth while to publish at the foot of a scientific paper the address of an American firm which "had successfully directed its attention to the supply of new chemicals for medicinal use." A few years later it was stated in the "Répertoire de Chimie" that the hypophosphites were rarely obtained pure because of the terrible explosions which occurred even when the most skilful operators handled them, and which hindered makers from keeping it longer than necessary under chemical action. The writer, M. Gérard Janss, then proposed the use of alcohol instead of water in their preparation, which prevented the dreaded explosions, and enabled the salt to be obtained in a state of purity. Those shown here seem of excellent quality.

**William Sims**, of Reading, who calls himself brewer, botanical distiller, and inventor, exhibits a large quantity of his botanical cure for deafness. Unlike most other specialties this is really patented. The letters patent were granted in 1863, and the specification is entitled "William Sims' New Compound Extract for the Cure of Deafness." From it we learn that the preparation is made by fermenting one part of honey with more than a hundred parts of warm water, and small quantities of chickweed, ground ivy, rosemary, and pennyroyal, and thereafter distilling over three-quarters of the liquid. It is to be used by "dropping 4 or 5 drops into each ear, every night and morning, of any person afflicted with deafness, temporary or otherwise, until the sense of hearing is restored. A beneficial result has hitherto invariably attended the use of this remedy." Such are the inventor's claims. Our readers will be able to estimate their value from the data we furnish. The letters patent and other documents are exhibited in the case at Paris, but are so arranged that nothing can be learned from them. We take our information from the specification published in accordance with the law. In the same case is exhibited Cooper's solid dust quencher, probably a preparation containing calcium chloride, or some other very deliquescent salt.

**W. J. Bush & Co.**—The articles displayed in this case are characteristic. They illustrate an industry of comparatively recent growth, which may be called domestic chemistry, or chemistry applied to the store-room. Everyone acknowledges, consciously or unconsciously, that he who supplies the wants of reatest number will have the largest business. The know- of this is too rarely acted on, especially by chemists; but rs. Bush & Co. make it one of their first business maxims. stics seem to prove that on an average Englishmen suffer a week of illness in the year. So that if people took physic when they were ill, and chemists sold nothing else, the latter d depend for his income on the supply of a want which felt only one day in fifty. However far elegant pharmacy advance, we are not likely to persuade our fellows that pills tinctures are luxuries, but just outside the limits of "pure macy" lie many preparations, the sale of which depends on mstances less occasional than illness. Most of Messrs. 's preparations are among these. The most striking ro of the display here is the collection of flavouring rials. They are of two kinds: essential oils and artificial ces, specially adapted for use in confectionery and similar ufactures; and quintessences for use in ordinary cookery. variety of essential oils exhibited is noteworthy. Messrs. & Co. claim to make a larger variety than any other ish firm, and many of the specimens exhibited would be cabinet curiosities to most chemists. The pale green ntial oil of cubebs in a country chemist's shop would be a y drug," yet it is shown here as a commercial product for h there is a demand, though it is but small. Artificial nces, made by the mixture of various ethers, either replace ntial oils at a lower cost, or more often by their great flavouring er represent fruits such as the pineapple, raspberry, straw- y, and pear, from which we are unable to obtain natural ntial oils. The quintessences are of greater commercial rest to our retail readers. More than thirty different kinds prepared, which probably include every variety of flavouring l by cooks. They are shown here in bulk, but we under- d that they are put up in bottles of sizes convenient for iling. A series of colours extracted from vegetables esent what the firm claim as a unique line of business. y are intended for use in cooking and confectionery, and are wn in great variety; yellows, blues, reds, greens, and blacks. y few vegetable colours, such as indigo, certain preparations cochineal, and some others have any claim to be called manent. We have had no opportunities of testing these urs, but Messrs. Bush claim this character for their prepara- s. French cream, another specialty, is intended for pro- ing a froth on aërated waters, ale, beer, and any other liquids which this feature may be desirable. The froth it produces certainly of extraordinary permanence. Besides these a iety of domestic preparations are exhibited which are better wn and need less remark. The general business of the ibitors is summed up in the boast that no respectable dinner h as would satisfy the typical Englishman can be put on the e in which Messrs. Bush's preparations do not appear in re or less prominence.

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* Soap and olive oil are the staple productions of Crete. The soap made in Canea and Rethymo is inferior to that made in the Candia district; the former sold in 1877 at 23*s.*, and the latter at 28*s.* per cwt. It generally finds a ready market in Turkey and Egypt. In 1877, 82,000 cwt. of soap were exported from Crete, valued at 105,300*l.*—Ed. C & D.

**The Oakbank Oil Company** exhibit a series of products the distillation of Oakbank shale. There are two features the mode of exhibition which call for special notice. This is almost the only exhibitor in Class 47 of the British tion which attaches prices to its goods. In all manufactured ds the item of cost is most important in judging the relative rits of different specimens of the same article; so that ether we consider an exhibition as a means of improving the nufactures, or as a great show-room to guide consumers to best market, exhibitors do not gain the maximum of advan- ge, unless they attach prices to their articles. The jury who amined this class made a special point of this, and, in some es, where the information as to price was afforded them ther by the labels nor by the representatives of the exhibitor, clared themselves unable to determine the merits of the hibit. In this case we are shown a rough-and-ready method determining the relative viscosity, or, in other words, the ricating power, of different fluids. To do this a vessel with mall hole in it is filled to a certain height with one of the ids to be tested, and the time it requires to empty itself is refully noted. The fluid which is to be compared with it is n treated in the same way, and the proportion of the times considered to be the measure of the relative viscosities. By s test, taking water as possessing a viscosity of 23, colza oil nds at 115, and a special cylinder oil manufactured by the mpany stands at the same unusually high figure.

**G. E. Broomhead.**—The chemical food shown by this exhibitor said to be made more agreeable than the ordinary. The aker claims that it contains 1 grain iron phosphate and 2½ grains calcium phosphate, with soda and potash in a single drachm. If this result is uniformly attained, the preparation exactly agrees with the formula published by the late Professor Parrish. This agreement is unusual. In 1876 Mr. W. L. Howie analysed twelve samples from various sources. They contained on an average less than half a grain (·456) of phosphate of iron and less than 1¼ grain (1·16) of the calcium salt. Some of the samples analysed, which had been obtained direct from Professor Parrish's pharmacy, were found to give an average even lower than this.

**Peter Spence.**—This firm exhibit what may fairly be called a trophy of pure chemistry. Cubical blocks of alum, the external faces of which are composed of bold octahedral crystals, are built in a square tower 12 feet high, and weighing 8 to 10 tons. Its corners are crowned with fine masses of the same chemical in large crystals. This alum is specially intended for the use of Turkey-red dyers, and is alleged to be the first and only article expressly prepared to meet their requirements. Turkey red was formerly dyed with madder by a somewhat complicated process; the artificial preparation of alizarine and other of its principles has very largely reduced the consumption of the crude drug, and has made the process more scientific and less uncertain. The small quantities of iron which are always present in commercial alum are sufficient to unfit it for this purpose, but the "Pendleton" Turkey red alum is a potash salt containing less than two parts per million of ferric oxide. This exhibit has been awarded the gold medal of its class.

Spence's patent Aluminoferric cake is the only other article exhibited. It is practically a sulphate of alumina slightly contaminated with ferric oxide. Of this material we are told in Paul's "Payen's Industrial Chemistry" that it may be used in nearly all cases as a substitute for alum, and since the useful qualities of alum are essentially due to the alumina it contains, alumina sulphate is for many purposes to be preferred, because it is cheaper, contains a larger amount of alumina, and is more soluble. It is, however, apt to contain an excess of acid and varying amounts of water, so that before using any particular sample it is necessary to discover how much water it contains. Bauxite is the material from which it is manufactured. This mineral contains variable proportions of alumina and ferric oxide combined with water to form hydrates, with small quantities of silica. Mr. Spence prepares from this a sulphate containing invariably 14 per cent. of alumina, ·75 per cent. of ferric oxide, 51·44 per cent. of water of combination, and no free acid, thus destroying the disadvantages we have just mentioned. The process by which this article is prepared is patented. Several interesting methods of utilising bauxite have been proposed at various times. Balard, the discoverer of bromine, has proposed to heat the mineral with sodium sulphate; the sulphuric acid escapes and a mass of aluminum hydrate and sodium aluminate is left. By other plans it is heated with salt and superheated steam, when hydrochloric acid escapes, or with calcined sodium carbonate. In either case a solution of sodium aluminate is obtained, through which carbonic acid gas is passed to precipitate the alumina and convert the sodium into carbonate. Pemberton proposed to save a large amount of fuel by mixing the exact proportion of moist hydrate of alumina and sulphuric acid required to form aluminum sulphate. The heat evolved on mixing sufficies to cause the solution of the alumina, and the mixture on cooling solidifies in a hard semi-crystalline mass. Unfortunately none of these methods have as yet succeeded on the large scale. Mr. Spence recommends his "Aluminoferric" for sizing "news" and other papers, for clarifying all kinds of clayey or turbid water for drinking and manufacturing purposes, and for decolorising and precipitating sewage and the waste waters of manufactories. For sizing it is, like other alumino-compounds, used with gelatine or resin soap, the alumina in the cake combining with the gelatine or with the fatty and resinous acids of the soap to form insoluble substances. For clarifying waters or sewage the small quantity of lime usually present in the water causes a precipitation of flocculent aluminium hydrate, which carries down all floating particles and causes them to subside with it, leaving the supernatant liquid clear. The Aluminoferric cake is supplied in two varieties. A, which is that we have described above, and is adapted for sizing ordinary papers, is sold at 3*l.* 2*s.* 6*d.* per ton. B, which contains 6 per cent. of insoluble matter, and has 12·46 per cent. of alumina, is designed for precipitation and for the sizing of brown papers, and is sold at 2*l.* 1*s.* 6*d.* per ton. The Alumino-ferric is now in regular use by two of the principal sewage precipitation companies, and one ton is found by them to suffice for the treatment of from 1,000,000 to 3,000,000 gallons of sewage.

In our earlier article on the varnishes exhibited by British makers we neglected to mention

Messrs. Reade Brothers, of Tower Varnish Works, Wolverhampton. These gentlemen show a good series of varnishes and their effects, and claim that none of their specimens are manufactured specially for the Exhibition, but that all are taken from stock. A large number of our readers are probably more acquainted, consciously or unconsciously, with the manufactures of this firm than with those of any other. Many chemists never sell varnish, but there are very few who do not handle show-cards. Whoever does this is very likely to be holding specimens of the work of Messrs. Reade Brothers. Their show-card varnish is claimed to resist for a long time hail, rain, storm—in fact, all the elements with the possible exception of lightning; and visitors to the Exhibition might do worse than inspect this case.

Price's Candle Company.—The part of this exhibit most interesting to pharmacists is a series of micro-photographs ranged round the four sides of the case. These represent the microscopic appearance of mixtures of stearin and palmitin obtained from various sources and mixed in different proportions. It seems doubtful if the microscope will ever enable us to detect the components of fatty mixtures, but whether it will or not, series like this will prove of the greatest value in determining the question.

North British Chemical Company.—In 1862 the Society of Arts awarded to Mr. E. C. C. Stanford their silver medal for a paper on the economic applications of seaweed, which was afterwards published as a pamphlet. The principal use of seaweed at that time was in the production of kelp, which was afterwards used in glass-making, for making lye for soap-boilers; and the spent lyes of the last manufacture were used in the preparation of iodine. Mr. Stanford proved that the excessive heat employed in the manufacture of kelp dissipated in smoke more than half the iodine contained in the seaweed; that, at the same time, the alkaline sulphates were reduced by the carbon to lower oxy-compounds, and at a subsequent operation required an amount of sulphuric acid to reconvert them, which cost 11*s.* to 13*s.* a ton of kelp—the whole cost of extracting the salts and iodine from the same quantity being only 25*s.* to 28*s.* These facts led to the introduction of the destructive distillation of seaweed as a commercial undertaking, and this exhibit is one of the practical outcomes of his labours. The products which have a commercial value are,[*] per 100 tons of dried seaweeds, volatile oil, 181 gallons; paraffin oil, 225 gallons; naphtha, 102 gallons; sulphate of ammonia, 63 cwt.; acetate of lime, 9 cwt.; charcoal, 17 tons 4 cwt.; gas, about 116,100 cubic feet; potassium chloride, 7 tons 16 cwt.; sodium chloride, 8½ tons; iodine, 326 lbs., and other products. The gas obtained is used to light the works. The gas liquor yields ammonia and acetic acid. The charcoal left in the retorts yields by washing salts of potassium and sodium, with iodides and bromides, and the remaining charcoal, which resembles that prepared from bones, is a powerful deodoriser and decoloriser, and is the cheapest in the market. The collection of the seaweed affords employment to a large and indigent population in the Western Isles far more remunerative than that of kelp, the burning of which it has largely replaced, and available at a time when hardly any other occupation can be followed. The company has works in the shires of Dumbarton, Argyll, and Inverness, and in County Clare. The refining works at Whitecrook employ about 200 men, and are capable of producing annually 50,000 lbs. of iodine, 5,000 lbs. bromine, 50,000 lbs. potassium iodide, 50,000 lbs. potassium bromide, 2,000 tons caustic soda, 1,000 tons potassium chloride, 100 tons potassium chlorate, and seaweed charcoal in large quantities. Besides these chloride of calcium is produced to a large extent in the manufacture of the chlorate. Under the name "Chloricalcium," it is patented as a disinfectant for use in urinals. A large lump placed in each will stand for months, in spite of its deliquescent character, and keeps the place entirely free from odour. A paper on it was read by Mr. Stanford before the Pharmaceutical Conference at Brighton, in 1872. Comparative experiments with various chlorides proved that for equal quantities chloride of iron[*] was the most efficacious as an antiseptic, while chloride of calcium stood next, followed far behind by chloralum and the alkaline chlorides. For equal values, chloride of calcium headed the list. Perhaps the most novel of the products exhibited is that labelled refined pearl ash. It is a very white dry article in small granules, and seems likely to be a convenient and saleable form of potassium carbonate.

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## THE DUBLIN CONGRESS.[†]

BY A BRITISH PHARMACEUTICAL JINGO.

On Tuesday, August 13, there met in the Grand Hall of the King's, Queen's, and the rest of the Royal Family's College of Physicians, Kill-time Street, Dublin, the famous galenipotentiaries who have been, as all the world knows, labouring for a year past to advance science and civilisation in the dominion of Farmassie. It is scarcely necessary to point out the immense importance which was everywhere attached to the meeting of this international assemblage of sages. We must go back to Athens and her Academe, to the days of Theodorus of Cyrene and the Seven Sages, ere we can find a fitting parallel to the display of erudite lore and learned converse which dazzled the people of Dublin a month ago. As the mind reflects upon the amount of collective wisdom embraced at one and the same moment by the four walls of that one chamber in the Physicians' College, reason fairly totters on her throne. The mental faculty is unable to grasp a conception so vast; it must be viewed by degrees, like a panorama.

The British Association had begged to be allowed to hold its meetings in the same city, permission being granted upon the express stipulation that on no account should any of its sections have leave to meet until the conference of galenipotentiaries was concluded. The beautiful capital of the sweet land of the shamrock, it is needless to say, was at its wit's end to discover how best to do honour to its brilliant guests. The Lord Lieutenant kept open house, and the members of the Congress could create no want which had not been anticipated for them; they were, in fact, as one of them remarked, left tenants of the Viceregal Court.

The deliberations of the galenipotentiaries were conducted with open doors, and, if no higher result accrued from their meeting, much good will be reaped from the presence of so many members of the Royal family and of both houses of Parliament at the shrine of St. Patrick. The *Times* placed three pages and its first leading article at the disposal of the Congress; a similarly liberal offer from the *Referee* was declined.

Precisely as the clock struck ten Count Wismuth Boullet, the President, ascended the dais, and a few moments afterwards, amid a breathless hush, he rose to address the assemblage.

He had, he said, as most of them were aware, confined his attention during his residence in Farmassie to the study of types of the national character. To his mind this was a branch of research as fascinating as it was inexhaustible. *Homo sum*, cried the President, whilst the room shook with the torrent of applause; *humani nihil a me alienum puto.* It would be impossible for him, he continued, to give them anything approaching an adequate idea of the many phases of life which he had encountered, and whose characteristics he had studied. He would therefore restrict himself to a sketch of an individual who might truly be said to be a representative of his class. He belonged to a religious order, and his name was Mouk Quay. In most graphic language the President then depicted the early life of this remarkable person—how that down to the age of six his diet consisted wholly of Pancreatic Emulsion and Eno's Fruit Salt. That from thence till he attained his twelfth year a more nourishing *régime* of Solar Elixir and Ozokerine was substituted. At this period he was placed in the seminaries, which were both abundant and excellent. Here he acquired an intimate acquaintance with ancient and modern literature, both orthodox and profane. Mathematics and astrology, divinity and card-sharping, also received a due share of attention. Upon leaving these schools, which he did at the expiration of three years, he entered a monastic retreat, where, rigidly excluded from all communication with outside world, he lived a strictly ascetic life, and daily ormed the most menial duties. Having attained the age venty-one, his solitary confinement was exchanged for a of the most eager interest. He either became affiliated to iversity, or sought some private trainer of acknowledged te. His whole aim now was to excel his compeers in the iancy of his intellectual achievements, and to write his name "big" on the tablets of original research. As part is curriculum he studied the sciences of gastronomy, phagy, polygamy, higgledy-piggledy, and many others, l ultimately his wisdom was so great that the memory of mon's diminutive accomplishments were enveloped in shame. k Quay then evinced a passion for travel, and he might een at this epoch of his life in many lands. Finally, this patetic philosopher sought the shores of England, and e, if, said the President, contemporary history is to be ed on, he develops a strong passion for music, which, im-ing him into an alliance with a wandering professor of the of Italian origin, earns him at last what is now known as Monk Quay's reward of "More kicks than ha'pence."

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[*] See paper read before the Society of Arts in 1862.

[*] Chloride of zinc was not experimented on; it is, we believe, quite as powerful as the chloride of iron.

[†] We shall heartily support any proposal emanating from the Executive Committee, with the object of expelling from its association the irreverent author of this paper.

At the conclusion of Count Boullet's address, ices and reen were handed round, the discussion of which having ter-ated,

r. Newcastle Don read an elaborate and most instructive er on "The best means of ensuring an absolute uniformity of ate and temperature in Farmassie." The doctor detailed at siderable length a very comprehensive series of experiments ch had been conducted by him, with the view of effecting in most complete manner the ends he had in view. He stated he had enclosed the whole region of Farmassie in an enor-is bell jar, provided with a glass jacket, which was filled h bisulphide of carbon. He had likewise succeeded in heat- the rainfall, previous to its descent, to an uniform tem-ature of 70 degrees F. The winds he had tempered by a smyth steam hammer. Many of the results of these pro-ses were most interesting. Clothing, the doctor said, was ererogatory. Houses and other means of shelter were a iculous excess. And, passing to the effects produced on etation, Dr. Don informed the Congress that on one occasion, ing sown some poppy-seed in a flower pot in the evening, he been able to collect several ounces of morphia by six ock on the following morning.

rofessor Looc Daring then read an important communica-n on the best means of estimating the amount of bloom on ches. The colour so frequently observed upon this fruit unquestionably, the Professor remarked, due to an oxida- product of *Oletabodygoandtakeabite Acid*. The compound decidedly injurious, and he had met with several cases of tinate diarrhœa, which were undoubtedly produced by its dvertent introduction into the human system. The process its estimation, described by Professor Daring, was highly enions, but is of too technical a character to be described in ail.

eñor Hum Neigh wished to be allowed to repudiate the soft eachment thrown out by the author of the paper just read, ndeed he might do so without peaching on trade secrets. had himself consumed several score of peaches at once, and far from their developing the acid which Professor Looc ring had described, he felt an internal conviction that they given rise to a strong base of the *Yucustfrutiesgoandhang* ics.

The next paper was by Herr Emeraldish on "Microphonic mmunication with German Bands." Farmassie is, it seems, gularly destitute of the little companies of Teutonic musi-ns, whose gratuitous performances in other regions tend in so ge a degree to make the lives of students and invalids a ssing, and not a curse. By a simple microphonic arrange-nt, which Herr Emeraldish described, it will be possible to nmunicate the strains of a select orchestra stationed in the art of the Black Forest, to the ears of the deafest inhabitant Farmassie.

A paper by Mons. A. Venues on "Virtue in Farmassie" lowed, but this is unfit for publication.

Abou Ben Jer then communicated some researches on "The ntity of the saccharine exudation obtained from *Fraxinus nus* with the diet of the children of Israel." By a long pro-s of reasoning the Abou clearly showed either that the brew historian must have been a very poor botanist, or that easily satisfied wanderers in the desert must have break-ted on pebbles. "The product of *Fraxinus Ornus* is nna," said the speaker, "and if it differs from that which our forefathers ate, it is evident they didn't know what they were eating, and consequently had no right to call it manna. Even if our manna is not their manna, it is a good deal better, and, even if it should be worse, 'manna' is a pretty name, and helps to sell it."

A paper in Chinese by So Ho Kin, on "The Comparative Strength of Five Cups of Tea," gave rise to an animated discussion, which prolonged itself far into the night.

Potheen and pipes were then sent round, and amidst the loves of "Kathleen," "Jeannette and Jeannot," and the roaring choruses of "Thady O'Flynn" and "St. Patrick's Day in the Morning," the great Congress was dissolved. Nothing remained for the stern galenipotentiaries but to disperse for the night to the "Imperial," to "Jury's," or the sweet glades of "Salt Hill," there to distangle their brains from the cobwebs of their craft, and wake up next morning, fresh for the unsurpassed beauties of Glendalough and the Devil's Glen, and free to enjoy with their whole souls the unbounded lavishness of Irish hospitality.

LEGAL & MAGISTERIAL.

## "POROUS" PLASTERS.

On August 8 the Master of the Rolls heard an important trade-mark case, in which Mr. H. D. Brandreth, of Liverpool, applied for leave to register as a trade-mark the word "porous" as applied to plasters. Messrs. Seabury & Johnson, of London and New York, and Messrs. Clarke & M'Mullan, of Belfast, opposed this application. A number of affidavits had been filed on both sides.

Mr. Aston, Q.C., and Mr. Chadwick Healey were for the applicant; Mr. Chitty, Q.C., and Mr. Wilkinson, Q.C., appeared on behalf of the objectors.

Mr. Aston, in opening the case, said the circumstances were somewhat peculiar. The applicant contended that he had a right to the word "porous" as a trade-mark.

The Master of the Rolls—Nothing but the word?

Mr. Aston—Yes, my lord.

His Lordship—No peculiarity at all?

Mr. Aston—No peculiarity at all. Of course it must be proved, and I know it is uphill work to satisfy your lordship's mind that it is a word, in the first place, proper to be used, and, in the second place, that it has been used prior to the Trade Marks Act.

His Lordship—You will have to satisfy me with something more than that. The word "porous" is very good English, and has a meaning.

Mr. Aston—It has a meaning, but at the same time it is not used here in the sense in which it has its ordinary meaning.

His Lordship—Has the thing in question got any holes in it?

Mr. Aston—Yes, but they are not such holes, and they are not so collocated as to cause the plaster in question (for it refers to a plaster) to be properly termed "porous." I have referred to various definitions of the word "porous."

His Lordship—"Porous" means having pores or holes in it.

Mr. Aston—Many holes. These perforations are not perforations or holes of such a character as would be properly described by the word "porous."

His Lordship—If the thing was called a porous plaster because it had holes in it; that is the reason I asked you whether it had. If you have used the term "porous" to describe the plaster, it is a descriptive word.

Mr. Aston—No, my lord; oddly enough, we have not done so. Letters patent were taken out in America by certain people for a particular kind of plaster, and this plaster was for the purpose of being applied to various parts of the person, where it might do good. The plaster was made porous, by having an almost infinite number of small holes made in it, and therefore it was properly called a porous plaster. The patent was afterwards disposed of by the patentees to a gentleman of the name of Brandreth, and when Mr. Brandreth became possessed of the right and title to this plaster, he found it was a very great mistake for it to be porous, and that, instead of its being made in the way the patentees had proposed to make it, and had previously made it, namely, by making it porous, he found out that a very much better plaster could be made by making it a perforated plaster.

His Lordship—What is the difference between perforated and porous? Have you got the thing itself, that I may see it?

Mr. Aston—I have some specimens here. Your lordship will see the holes that are perforated are *raris intervalis*; whereas, if it were porous, the holes would be so close together as to be almost infinite in number, and scarcely divisible. If your lordship will hold it up to the light, you will see that in no sense could that fairly be called a porous plaster [handing a specimen to his lordship].

His Lordship—Is this the original or the new one?

Mr. Aston—That is the new one. That is Brandreth's plaster, or what is called Allcock's porous plaster, and your lordship will see that the holes really are, as I said before, placed *raris intervallis.*

His Lordship—I do not think so; there are a great number of holes.

Mr. Aston—There are a great number.

His Lordship—A very great number.

Mr. Aston—But at the same time they are not so close together as in any sense to make the plaster come within the ordinary designation of "porous."

His Lordship—I see here it is "Patent, granted March 26, 1845."

Mr. Aston—Yes, my lord.

His Lordship—It was a patent for a porous plaster?

Mr. Aston—Yes.

His Lordship—And this is "Allcock's Porous Plaster."

Mr. Aston—Yes, my lord.

His Lordship—That is not a trade-mark. Is this the thing you have always been using?

Mr. Aston—No, my lord.

His Lordship—Well, this has been handed up to me as the thing.

Mr. Aston—That is the plaster.

His Lordship—And this [pointing] is the advertisement?

Mr. Aston—Yes, my lord.

His Lordship—If it is what you have been always using, it is not porous plaster, but "Allcock's India-rubber Porous Plaster." I know nothing about it except from what is handed up to me.

Mr. Aston—I was going to state to your lordship how that is as soon as I had come to that part of the case, and that I shall be obliged to admit (because I should, of course, have stated the whole case to the Court, as I always endeavour to do) that the legend that has been used is "Allcock's Porous Plaster."

His Lordship—If this is your trade-mark, what has become of this thing? It is an eagle, is it not?

Mr. Aston—We have used a variety of devices—an eagle, a shield, and an animal of some kind.

His Lordship—I should have thought that the eagle, or the shield, or the animal is your trade-mark.

Mr. Aston—I expected your lordship would say so with respect to that particular thing.

His Lordship—Well, that will not do. Now, is there any other?

Mr. Aston—Yes, my lord, we have several of them.

His Lordship—Let me look at them all.

[They were handed to his lordship.]

Mr. Aston—I was going to say that, having found that the plaster was not a good thing when it was made porous, there was a change in the character of the plasters, and a change in its manufacture when the property in the plaster became vested in a gentleman of the name of Brandreth, who afterwards conceded his rights in them to a company, in which the applicant is one of the principal shareholders, and he is applying on his own behalf and on behalf of the company.

Mr. Chitty—Oh no.

Mr. Aston—Wait a moment.

Mr. Chitty—He is only an agent.

His Lordship—I see it is a kind of blister.

Mr. Aston—I do not know that it acts as a blister, but I believe it acts as a kind of comfortable cover.

Mr. Chitty—It is a general restorer and curer of all the ills of the flesh.

His Lordship—I have never heard of it before, but I will read what it says of itself.

Mr. Chitty—It calls itself porous, and I quite admit it not porous.

His Lordship—It was?

Mr. Aston—Its predecessor in title was, if I may venture to say so.

His Lordship—This is stated to be a patent, granted March 26, 1845.

Mr. Aston—That is an unfortunate mistake, because a patent was not granted for that plaster, and I quite feel I shall have a difficulty in satisfying the Court as to the strength of my position in that respect; but I should like to have the facts before the Court, because they are very curious.

His Lordship—By all means. My only object in interrupting you was that, this being the last day of the sittings, I thought it would be convenient if I could hear something where somebody might get an order, which I do not think you will in this case. That is all. Go on.

Mr. Aston—Yes, my lord; I am bound to admit that Mr. Brandreth having got possession of the right to make the plaster, he changed it in character, and, although he got the right of the grant of the letters patent, the thing he made was of a different character.

His Lordship—I will tell you what he says here. "Beware of spurious porous plasters"—showing that "porous plasters" is not a trade-mark, but a description of the article, although there might be a spurious one. Then it goes on to say, "The genuine have 'Thomas Allcock's Porous Plaster.'" Then it says, "Never purchase unless you see it there." That is "Never purchase unless you see "Thomas Allcock & Co's. Porous Plaster." You are not to purchase unless you see all that there.

Mr. Aston—That is so, my lord.

His Lordship—Then how can you say that "porous" is your trade-mark?

Mr. Aston—The entire trade-mark representing the company may be taken to be "Thomas Allcock's Porous Plaster," but then I have eight or ten affidavits, all of which go to this, that when a person asks for a porous plaster, he means Thomas Allcock's porous plaster, and therefore your lordship sees the public have taken the dominant word in the entire appellation which really has been used by the applicant, and have nullified the rest.

His Lordship—The public cannot do that. It is a question what you have used, not what the public have called it.

Mr. Aston—The public really have nullified our title.

His Lordship—They cannot do that. You have only a right to the trade-mark you have used.

Mr. Aston—Then, if your lordship holds that, inasmuch as our use has been of Allcock's porous plaster, and that we cannot out of that collocation of words take one which the public have selected, and which alone they have used, and allow us to register that single word, of course my case is gone.

His Lordship—It is not much of a case to go, according to this which is handed up to me.

Mr. Chitty—My friend has not read this document (holding up a pamphlet).

Mr. Aston—It is quite true we have had victory after victory in the States upon this very question. We have sued people and against the very persons who are now opposing us to-day we have at this moment an injunction or interdict lying upon them, preventing them from using the word "porous."

Mr. Chitty—I should say not.

Mr. Aston—It is an interdict against the word "porous."

Mr. Chitty—It is "Allcock's Porous Plaster."

His Lordship—I find that neither the original use of the word in the patent nor your use of the word was strictly correct.

Mr. Aston—That is true.

His Lordship—Therefore you are using the word "porous" in the original patent to describe something with holes made in it which never had pores.

Mr. Aston—No; it has always been wrong. I admit that, and therefore I say that the word is not descriptive, but is a fancy word.

His Lordship—No; it was intended to describe these minute holes, which are something like pores.

r. Aston—Originally, my lord, but not in the Brandreth er.

is Lordship—But the Brandreth plaster is a patent ted March 26, 1845; that is your plaster, is it not?

r. Aston—No; our plaster is the one we have put in the e of that.

is Lordship—You say so, but you so described it.

r. Aston—So we do, unfortunately, in America.

is Lordship—How can you say that is a porous plaster?

r. Aston—It is not porous. Your lordship sees what we done has been to advertise the plasters, and to adopt the which the public have forced upon us, and I am afraid to how many thousands of pounds we have spent in adverg, but I have heard that it is as much as 60,000*l.*

is Lordship—You may have the most indisputable right to these "Allcock's Porous Plasters."

r. Chitty—I see they stamp it so, and they warn the lic against spurious porous plasters.

r. Aston—Yes, my lord, but the public will not have that term; the public call it "porous" simply, therefore we h to have your lordship's permission to register that, the iuant term, which the public have forced upon us.

is Lordship—As far as I know, you never have used it.

r. Aston—We have used it with the others.

is Lordship—You ask me to register the word "porous," nothing but "porous"?

r. Aston—Yes, because the public will not have anything ?

r. Chitty—Oh yes, there are dozens of porous plasters. ey go by different names as well as Allcock's.

is Lordship—What have you used in this country?

r. Aston—We have used "Allcock's Porous Plasters."

is Lordship—And nothing else?

r. Aston—We gave the public notice on the 13th of Octo, 1875, that the trade-mark of Allcock's porous plasters is orous."

His Lordship—That is not of any use to you.

r. Aston—Well, I cannot carry the case any higher if your dship will not, under the circumstances, allow the word orous," which the public have forced upon us, as being our de-mark, to be registered. All our advertising expenses will gone, and our opponents here will reap the advantage of at we have done.

His Lordship—Well, you can tell them that Allcock is the ht man, and not Hall or anybody else.

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His Lordship—This is an application by a gentleman of the ne of Brandreth to register a trade-mark. What he wants register is the word "porous" as applied to a plaster. His eged title to the trade-mark is this: He bought from a Mr. cock (who invented a plaster, which I will mention pretly, and obtained a patent for it) his rights under that ent, which appear now to have expired. Allcock had ented an india-rubber plaster, that is, having india-rubber the back, the face of this being some composition, the ure of which I do not know, and he drilled or forced into plaster an enormous number of small holes. It had an ia-rubber back, and it had a great number of small holes in and therefore he called it an india-rubber porous plaster, d he sold it under the name of "Allcock's India-rubber rous Plaster."

Now, no doubt the word "pore," in its scientific use, means, I may call them so, the natural holes between two particles matter in juxtaposition; it may be in an organic or an inornic body. That is its proper meaning, and, as a rule, those les are very small and generally invisible, but in some cases ey are by no means invisible.

This man, therefore, could not have used the word "porous" its strictly scientific sense, but he did use it in a sense alogous, to describe a plaster which had a great many holes in and it was a very fair adaptation of the word.

Having done that, the assignee of the patent found it beneial to make a plaster with not so many holes in it, but still th a very considerable number of holes, and he kept on sellg it under the same designation of "Allcock's India-rubber rous Plaster." It was not really Allcock's then, because it s only made under Allcock's patent, and accordingly you find the face of the plaster these words, "Patent granted March , 1845," showing that what Brandreth was selling was an dia-rubber porous plaster made in accordance with Allcock's patent. That is the meaning of it, and that is what he issued to the public.

Now, first of all, the applicant here says that his plaster is not strictly described as a porous plaster. I do not know why; it is as much a porous plaster, according to my notion of the word "porous," as the original plaster. It may not have quite so many holes, but it has a great number, and it seems to me that, if the first might be called porous, the second might. I have not counted them, but there are a great number of holes, and they are tolerably close together. That being so, what does he claim as his mark (for this is the thing to see). He claims no trade-mark at all, but he does claim his description, "Beware of spurious porous plasters." So he tells the public, "Porous plasters exist besides mine, and there are spurious porous plasters."

Then he goes on to say, "The genuine," that is, the genuine porous plasters, "have 'Thomas Allcock & Co.'s Porous Plaster' on the stamp, and never purchase unless you see it." So that he tells the public, "I sell Allcock's Porous Plaster," and then you will find on the face of it a certificate of genuineness, "Allcock's Porous Plaster, a curative host in itself." The term "host" is not used in its accurate way, but it is used in the same way as the word "porous."

In my opinion, that is not a trade-mark, but a description of the article, and in my opinion he never dreamt of claiming the word "porous" until recently apparently, when after the passing of the Act he issues an advertisement. But if it were a trade-mark, you cannot take out one bit of it. If there is any trade-mark at all, it is "Allcock's India-rubber Porous Plaster" or "Allcock's Porous Plaster," and on that ground the application must also fail. It does not matter much on which ground it fails; it does fail, and I cannot listen to the contention that the application failing, and it being a question of legal right, the applicant is not to pay the costs of it.

Mr. Chitty—I will only say this, my lord, that I hope my friend will advise his clients, when they next publish an account of their legal victories, with "important decisions, injunctions, and the like," to include the victory in the Rolls Court of the 8th August, 1878. Your lordship's decision as to costs includes all the costs before the Registrar?

His Lordship—The application is refused, with costs.

Mr. Chitty—Including the costs before the Registrar?

His Lordship—Oh yes; it always does, I think.

A long discussion between the counsel and the judge followed as to how far back the costs were to be carried. Mr. Chitty claimed costs of all proceedings before the Registrar, but his lordship, after consideration, decided that he had only power to grant costs from the time the case stood for the hearing of the court.

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## BANKRUPTCIES AND LIQUIDATIONS.

### William Beatson, Rotherham.

A meeting of the creditors was held on Aug. 16, at which a statement of affairs was put in showing:—Liabilities 24,684*l.* 4*s.* 8*d.*, and assets 10,200*l.* 11*s.* 10*d.* The receiver also submitted an approximate statement of the affairs of the firm of Messrs. Beatson, Mycock & Co., which showed that the liabilities were about 7,500*l.*, and the assets, without Mr. Mycock's interest in the works, amounted to about the same sum. It was stated that the partnership with Mr. Mycock, entered upon in January last, had considerably complicated the accounts.

On August 30, at the Rotherham Police Court, William Beatson was charged with obtaining from J. H. Mycock, by false pretences, the sum of 5,000*l.*, and also with embezzling 372*l.*, the property of the firm. This was in two sums which had been received from customers but not entered in the books. Beatson had represented himself to be worth 25,000*l.*, and in consideration of 5,000*l.* advanced by Mycock, handed over to him a fourth share in the business. At that time he was, it was alleged, hopelessly insolvent. The charge of embezzlement was dismissed, but on the other charge defendant was committed for trial at the Assizes.

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### F. W. Steele, Chemist, 41 Bishopsgate Street Without, and Bryantwood Road, Holloway.

The debtor, Frederick William Steele, has presented a petition for liquidation, and Mr. Brough applied to the Court last month for the appointment of a receiver of the estate and for the usual interim order restraining actions. The debts were about 2,600*l*, and the assets, consisting of stock, furniture, &c., were of the estimated value of 150*l*. The nomination of Mr. H. Kidson, Union Court, Old Broad Street, as receiver, was supported by creditors for 490*l*.; and Mr. Registrar Spring Rice made the appointment and granted an interim injunction. The following is a schedule of the principal creditors:—

| | £ | *s.* | *d.* |
|---|---|---|---|
| Paterson, W., 50 Brooklyn Street.. .. .. .. | 700 | 0 | 0 |
| Herrings & Co., 40 Aldersgate Street .. .. .. | 290 | 0 | 0 |
| Towse, T. P., 6 Lawrence Pountney Lane, E.C. .. | 200 | 0 | 0 |
| Greater, A., 105 St. John Street Road, E.C. .. .. | 115 | 0 | 0 |
| Steward, J. H., 6 Lawrence Pountney Lane, E.C. .. | 100 | 0 | 0 |
| Dows, Clarke & Co., Frith Street, Soho.. .. .. | 95 | 0 | 0 |
| Stapler, E., Exning, Newmarket .. .. .. .. | 55 | 0 | 0 |
| Death, Miss, Bury St. Edmunds .. .. .. .. | 50 | 0 | 0 |
| Death, W., Upper Street, Islington .. .. .. | 50 | 0 | 0 |
| Ford & Shapland, Great Turnstile, W.C. .. .. | 50 | 0 | 0 |
| Steel, W., Bury St. Edmunds .. .. .. .. | 45 | 0 | 0 |
| Schweppe & Co., Berners Street, W. .. .. .. | 41 | 8 | 0 |
| Jennings, F., Soho Wharf, Harrow Road .. .. | 42 | 0 | 0 |
| Huskisson & Co., 77 Swinton Street .. .. .. | 35 | 18 | 0 |
| Hutton, J., Strand .. .. .. .. .. .. | 35 | 10 | 0 |
| Paynter, —, 41 Bishopsgate Street Within .. .. | 30 | 0 | 0 |
| Meggeson & Co., Miles Street, E.C. .. .. .. | 28 | 0 | 0 |
| Sutton & Co., Bow Churchyard, E.C. .. .. .. | 26 | 10 | 0 |
| Dicks, J., 313 Strand, W.C. .. .. .. .. | 25 | 0 | 0 |
| Smith, —, 28 Liverpool Road, N. .. .. .. | 25 | 0 | 0 |
| Thompson, H. A., 22 Worship Street, Finsbury .. | 23 | 0 | 0 |
| Newbery, F., & Sons, 37 Newgate Street, E.C. .. | 20 | 0 | 0 |
| Clapham, F., Sunnyside, Sandgate .. .. .. | 20 | 0 | 0 |
| Davis, H., 42 Dorset Street .. .. .. .. | 18 | 18 | 0 |
| *Weekly Dispatch*, Fleet Street, E.C. .. .. .. | 18 | 13 | 0 |
| Thomas & Son, 74 George Street, W. .. .. .. | 18 | 0 | 0 |
| Peasegood & Smith, Upper Street, Islington .. | 15 | 13 | 0 |
| Brown, G., & Sons, 21 Cowcross Street, E.C. .. .. | 13 | 5 | 0 |
| *News of the World*, 19 Exeter Street, W.C. .. .. | 13 | 0 | 0 |
| Jackson, W., 3 Little Tower Street, E.C. .. .. | 10 | 5 | 0 |
| Wyllie, H., St. Helen's Place, E.C. .. .. .. | 10 | 0 | 0 |

On the case again coming before the Court on August 20, the Registrar continued the injunction pending the liquidation.

## Foreign Items.

OPIUM.—110,300 lbs. of opium is the estimated export of the Province of Angora in 1877. It is valued at 74,975*l*.

OPIUM.—1,570 lbs. of opium were exported from Suez in the year 1877. All this is probably of Egyptian origin, for opium does not appear in the list of imports.

ADULTERATION IN PARIS.—At a recent session the municipal council of Paris voted a sum to defray the expenses of a laboratory for the detection of adulteration in articles of food.

OLIVE OIL is beginning to be exported to England from Santa Maura (Cephalonia). The export duty on olive oil from Zante is 20 per cent. *ad valorem*.

CASTOR-OIL SEEDS.—In 1876, 255,000 lbs. of castor-oil seeds were produced in California, the average crop being 1,000 lbs. an acre.

THE NEW CUSTOMS TARIFF for the Argentine Republic which came into force this year subjects perfumery to a duty of 40 per cent. *ad valorem*, yerba maté to 35 per cent., quicksilver to 5 per cent., and all other druggists' goods to 25 per cent.

QUICKSILVER.—Between July, 1850, and December, 1875, the mines at New Almaden, United States, produced 406,457,255 lbs. of mercury, which was placed in 595,882 flasks. The average number of flasks turned out a month has been 2,135¾.

DEAD SEA RICHES.—A Franco-Jewish Company has obtained a concession from the Turkish Government for drawing off bitumen and working mineral pitch residues, paraffin, benzine, naphthaline, &c., from the Dead Sea.

MANGANESE ORE of excellent quality has been found at Fabriano, Italy. Our vice-consul reports that this provides a good opening for foreign capital, as the owners had not sold their claim when he wrote, and there is no chance of a local company being formed.

POSTPONEMENT OF THE MEETINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.—The yellow fever epidemic in the southern cities of the United States has led the American Pharmaceutical Association to postpone their meeting till November. It was to have been held at Atlanta, Georgia, on September 3.

COSMETICS form an important article of import into Russia.

THE WAGES of an apothecary in San Francisco in 1877 wer 25 to 60 dollars, and of a druggist 30 to 60 dollars a month with board and lodging. According to the report of Con Booker, the only class mentioned which was better paid was that of hotel cooks, who received 40 to 100 dollars a month.

LIEBIG'S MONUMENT.—The *Allgemeine Zeitung* states t 120,000 marks are subscribed for the Liebig Memorial at Munich, which will suffice for a bronze statue and for a han some pedestal. The judges of the designs sent in have awar the first prize, of 2,000 marks, to Wagmüller, of Munich, the second, of 1,500 marks, to Begas, of Berlin.

AMERICAN WAX.—The product of wax in the United Stat stated to be 20,000,000 lbs. annually, and increasing—worth money at least $6,000,000. Of this amount $700,000 worth exported, and about $1,200,000 of honey also goes abroad. T total product of honey and wax is worth at present in United States nearly $15,000,000.

NOTES FROM MOGADOR.—The export of cummin seed f Mogador was 270 cwt. in 1876, and 671 cwt. in 1877. price also advanced from 15*s*. 6*d*. to 20*s*. a cwt. Sevent eighteenths of this comes to Great Britain and the Colonies, rest to Portugal.

Ten thousand nine hundred leeches, valued at 17*l*., were expor from Mogador to Spain in 1877. 17,400 dozen, valued at 696 left Cadiz for the Spanish colonies in 1876.

The imports of drugs into Mogador increased from 639*l*. 1876, to 2,872*l*. in 1877. Two-thirds of this comes from Gr Britain, the rest from France. Camphor, sarsaparilla, olibanu and benzoin are the drugs imported. The last two are used incense, which is one of the daily necessities of a Moor household. 456 cwt. of benzoin, valued at 2,512*l*., were impor into Morocco through Tangier in the latter year.

The white gum-arabic, formerly brought from the Soudan a exported from Mogador, is no longer found in the market. Th expense of transit has rendered its price too high f exportation.

Sandarac is collected from the ara tree, a species of cedar (*Cal-litris quadrivalvis*, Vent.), which abounds in the hilly parts of province of Italia, in the neighbourhood of Mogador. In or to obtain it the natives chip the trunks and branches of t trees. When the summer sets in, and if the year favourable, the gum oozes, not only from the injured spots, b from all parts of the tree which are thus prepared. A dr summer, with the absence of the ordinary north-east winds, very favourable to its production. 5,830 cwt. were expor from Mogador in 1877, and were valued at 20,988*l*.

SPURIOUS PROPRIETARY ARTICLES.—In these a considera trade is carried on in Constantinople. Vice-Consul Wrench his report on the trade and commerce of Constantinople f 1874 and 1875, published recently, says:—"In addition to t articles enumerated in my report for 1873 I may mention t following instances affecting British commerce. A nauseo compound manufactured here is sold as Guinness's extra stout, by being sold in bottles bearing the label of the well-known Dublin firm. Bryant & May's pearl matches have of la obtained a certain degree of favour in Turkey, consequent spurious imitations with forged labels were soon introduced; the labels have all the appearance of being genuine until on cl inspection the makers' name is discovered to have been chang to 'Brynt & Mayo.' Stephen's blue-black ink is also imitated and put up in stone-ware bottles, bearing labels either genu or forged. Sometimes a clever imitation of the real label is met with, where the name of Stephens is printed as 'Steelpens' in capital letters. Imitations are sold here of the calcined magnesia prepared by Messrs. Henry, of Manchester. The c pound is contained in bottles bearing Messrs. Henry's nam in relief, and the bottle is covered with a forged British Government stamp, while an ill-spelt reproduction of the printed notice wrapped round the bottle informs the public that 'in the British dominions the forgery of the Government stamp highly penal.'" It seems probable that if the spurious article are not entirely of English manufacture, the labels and bottl come from this country. No Turk would ever have thought of "Steelpens" as the substitute for Stephens, nor would he have dreamed of the advantage of avoiding the original name.

## Pharmaceutical Chemistry.

ie Virginian Prune.—The Société Royale de Medicine of sels has awarded a prize to the author of a memoir on the inian prune. The writer finds that it contains amygdalin, emulsin, and tannin. It depends, according to him, en- on these constituents for whatever medical virtues it may ess, the two first forming hydrocyanic acid in the presence ater, and the latter exercising an astringent action. The r questions the value of a medicine which can only offer an inite and varying proportion to medicines so readily avail- as these.

eranium Oil.—Mr. H. W. Langbeck, analytical chemist, eman Street, E., writes to us:—In the August number he Chemist and Druggist an easy test of geranium oil scribed. Being much interested in anything concerning oil, having found out a way to make it artificially, I d my preparation for its solubility, and can now state it not only stands the test, but that it readily dis- s in double its volume of a mixture of three parts spirit ine and one part distilled water. About other tests applied py manufacture, see Professor Dragendorf's "Note on nium Oil," *Pharmaceutical Journal*, No. 395, of January

he Chemical Society have lately made the following grants their Research Fund:—50*l.* to Dr. Tilden, for an investi- n into the chemical nature of the terpenes; 50*l.* to Mr. N. Hartley, for apparatus and materials required in carrying research on the action of organic substances on the ultra- et rays; 30*l.* to Dr. W. Ramsay, for determining the electric luctivity and resistance of solutions of salts at different peratures; 20*l.* to Mr. W. Jago, for the purchase of apparatus ired for carrying on a research on the organic matter in water; 10*l.* to Mr. W. A. Shenstone, for an examination of ain reactions of brucine and strychnine.

orphia Tolerance.—Dr. Lyman, of Boston, records the of a lady, 47 years of age, who has taken morphia for ears. For 23 years she has consumed 16 grains a day. sometimes takes half this as a single dose in the morning, the whole is usually taken before mid-day. Her general th is but little disturbed. Dr. J. L. Little reports a case hich a child, eight months old, took 2 ozs. of Magendie's tion of opium (equal to 26 grains morphia acetate) in ours. Paregoric had been administered to it when three s old to relieve pain caused by inflammation of the knee t. The dose of opiate had been gradually increased to the e amount. The dose was then gradually diminished about ops a day, and at the time of reporting 10 drops were given ed-time only. The child's appearance had improved much, as intelligent, and weighed 18 lbs.

dian Bael.—Sir Joseph Fayrer has recently called atten- to the value of the Indian bael. The tree of which it is fruit grows to a large size, and is sacred to Siva. The fruit, size of an orange, contains an aromatic essential oil, with gent and astringent substances. It is employed especially as rminative, as an astringent, and as an aperient in constipa- , being given especially in dysentery, diarrhœa, and in- estion; in the latter to regulate the bowels. In the later ges of dysentery, when diarrhœa, simple or dysenteric, con- es, with exhaustion, Sir Joseph Fayrer especially recom- ds it. It has been occasionally given in this country, and a nula exists in the British Pharmacopœia for the preparation liquid extract, but the value of this preparation is regarded omewhat doubtful. In India it is frequently given in the m of sherbet or marmalade.

Salicylic Acid.—In Hager's "Pharmaceutische Central Halle" a singular case of death, apparently resulting from the administration of an impure salicylic acid, is recorded, the particulars being taken from the *Allgemeine Medical Zeitung.* A working-man at Wreschen was suffering from acute rheumatism in the knee joints, and in order to relieve the pain the physician ordered a morphia injection of ·01 gramme, and four powders of salicylic acid, each containing ·75 gramme, one powder to be taken every hour. The first powder seemed to cause a violent perspiration and great weakness; so much that the wife was reluctant to continue them, but the sufferer himself insisted on taking them. When the four had been taken an intense headache set in, with a loss of consciousness. The patient died in about 40 hours. No examination of the corpse was made. The case against salicylic acid is by no means proven on such evidence as this, but it seems to have been discovered that the salicylic acid used was an old preparation, and was probably partially contaminated with carbolic acid.

Bismuth Subnitrate.—M. Alfred Riche, Professor at the Ecole de Pharmacie, has recently drawn attention afresh to the fact that the preparations of bismuth contain recognisable quantities of lead, and it has been said that one sample of the subnitrate contained as much as 1 per cent. of the contamination. This result was obtained by treating a solution of the salt with sulphuric acid containing a little hydrochloric acid, as much alcohol as possible, and estimating the precipitate as lead sulphate. The author has analysed samples of the commercial article, and finds the proportion of this precipitate oscillates between ·580 and ·135 per cent., the average being ·273 per cent. If this consisted solely of sulphate of lead, it would correspond at the most with only ·4 per cent., or 4 parts in 1,000. But analysis proves it to be a very complex body. It contains sand, gelatinous silica, silicates, bismuth, silver, iron, and, in large quantities, calcium combined with sulphuric acid. The amount of lead actually contained in the precipitate varied from ·34 per cent. to nothing, and averaged ·063 per cent., or 63 parts in 100,000. It can hardly be imagined that this quantity is sufficient to make this preparation a source of lead poison. To discover if it was possible to prepare pure subnitrate from bismuth contaminated with lead, 2 per cent. of the latter was added to a sample of bismuth. This was dissolved in nitric acid divided into three parts. To No. 1 was added 40 or 50 times its bulk of common water; to No. 2 was added ammonia in quantity insufficient to neutralise it; No. 3 was treated with ammonia in excess. No. 1 gave, when treated with sulphuric acid, a very slight deposit, in which lead could not be detected; No. 2 contained about ½ per cent. of lead; and No. 3, 9 or 10 per cent. When experiment No. 1 was repeated with very hard water, the quantity [of deposit and the percentage of lead were largely increased. It is the custom of manufacturers to precipitate the nitric acid solution by ammonia, with the view of increasing the yield of subnitrate. To decide on the most profitable method of proceeding, samples of subnitrate precipitated (1) by ordinary water, (2 and 3) by ammonia in small quantity and in excess, (4) by carbonate of soda, and (5) by hard well water, and (6) several purchased in commerce, were analysed, to discover what percentage of nitric acid they contained. We need not point out that the acid is the cheapest constituent of the article. No. 1 contained 13·78 to 15·42 per cent. of $NO_5$; No. 2, 9·8 per cent.; No. 3, 2·9 to 0·60 per cent.; No. 4, 3·14 per cent.; No. 5, 2·12 to 1·47 per cent.; No. 6, 0·898 to 11·98; average of 8 samples, 9·1 per cent. This clearly proves that a cheaper article can be produced by precipitating the subnitrate with ordinary soft water, while loss of bismuth may be prevented by precipitating it as oxide from the mother liquors. Experiments made to determine the yield of subnitrate and oxide of bismuth from given quantities of the metal gave the following results:—

| | | | |
|---|---|---|---|
| Bismuth .. .. .. .. | 50 | 100 | 200 |
| Yielded subnitrate .. .. .. | 55 | 114 | 230 |
| Oxide precipitated by ammonia .. | 14 | 32 | 69 |

The practical conclusion from this paper is that the pharmacopœial process yields a purer product than any other, and that when the bismuth contained in the mother liquors is preserved, it is also the most economical.

Messrs. Leslie & Co., of Walbrook, have arranged with Mr. James Baly, of Warwick, to combine with their own business the sale and manufacture of Moor & Baly's Plasters. Messrs. Leslie & Co. are also makers of Patent Pliable Plasters.

THE CHEMIST AND DRUGGIST

☞ *For particulars of Advertisements, Subscriptions, &c., please refer to the first page of Literary matter. An Index to the Advertisements contained in this issue will be found in the front portion of the Journal.*

*OFFICE—Colonial Buildings, 44a Cannon Street, London.*

**RENDALL'S THEOBROMINE,**
OR
CONCENTRATED COCOA,

BEING a first-class article, and nicely got up, commands a good sale by all Chemists who bring it under the notice of their customers.

In 1*s.*, 2*s.*, 3*s.* 9*d.*, and 7*s.* 6*d.* tins, through the Wholesale Houses, or direct from the Proprietor,

**J. M. RENDALL,**
**28 QUEEN STREET, EXETER.**
*Chief Wholesale Agents—*
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SEE SEABURY & JOHNSON'S Advertisement of INDIA RUBBER POROUS AND SPREAD PLASTERS on page 105.

**SANITAS.**

SANITAS.—The fluid is colourless, non-poisonous, and agreeable; it is harmless to furniture and linen, and is "THE ENEMY OF DISEASE." "SANITAS is a valuable Antiseptic and Disinfectant."—*Times.* "SANITAS is first favourite among Disinfectants."—*Lancet.*

SANITAS (FLUID) preserves food and prevents fever. In bottles (1st quality only) at 1s., 1s. 6d., and 2s. 6d.; in gallons at 20s. (1st quality), and 5s. (2nd quality).

SANITAS DISINFECTING POWDER.—In 1 lb. tin boxes at 1s., or in bulk.

TOILET SANITAS.—As a mouth-wash; for the bath; and for all the purposes of toilet vinegars. In elegant bottles at 2s. 6d.

TOILET SANITAS SOAP embodies the healthful principles of Sanitas. In boxes of three tablets at 1s. 6d.

SANITAS TOILET AND NURSERY POWDER, in 1s. boxes. Warranted free from all mineral matters and poisons.

CAUTION.—These articles may be had of all Chemists, Perfumers, and (wholesale) of the Company, 57 Moorgate Street, E.C.

PAMPHLETS AND PARTICULARS FREE ON APPLICATION.

**PURE CRUSHED LINSEED.**

PETER MUMFORD & SON'S PURE CRUSHED LINSEED.
BEST QUALITY. NO OIL EXTRACTED.
Ground so as to retain the natural colour of the seed without being heated.
22s. per cwt. Special Quotations for Larger Quantities.
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**IMPORTANT TO CHEMISTS,**
**SODA WATER MANUFACTURERS, AND OTHERS.**

Removal of Lead from Water.
**THE SILICATED CARBON FILTER**

Entirely removes Lead from Water, thus meeting the complaints that arise from time to time as to the presence of Lead in Aërated Waters.

For confirmation of this assertion, see the opinions of such authorities as Dr. BARTLETT, Professor WANKLYN, and others, at page 74, December, 1876.

**EVANS, LESCHER & EVANS,**
WHOLESALE & EXPORT DRUGGISTS,

Beg to announce that owing to the RE-BUILDING OF THEIR PREMISES at BARTHOLOMEW CLOSE, E.C., they have REMOVED to Temporary Warehouses at

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**HOMŒOPATHIC MEDICINES.**

**E. GOULD & SON,**
*Chemists by Appointment to the London Homœopathic Hospital*
*Manufacturing Homœopathic Chemists,*
Are desirous of appointing Agents for the Sale of their Preparations in various parts of the United Kingdom and the Colonies.
For Particulars apply at 59 Moorgate Street, E.C.

**REDUCTION IN PRICES.**

**GENERAL MINERAL WATERS DEPÔT**
**27 MARGARET STREET, REGENT STREET,**
**LONDON.**

**ELLIMAN'S EMBROCATION.** See page 47.

## EDITORIAL NOTES.

### PATENT MEDICINES AND THE PHARMACY ACT.

IN our July number we stated on official authority that during the year ending March 31, 1877, the number of Patent Medicine Licenses issued by the Board of Inland Revenue reached 15,823. It is, we believe, within the mark, if we estimate that not less than 5,000 of these are taken out by persons not registered chemists and druggists. Those persons are expressly prohibited by law from selling opium, chloral hydrate, and other poisons or preparations containing these, in an open manner; but in concealed, and therefore more dangerous forms, anyone can sell the most deadly of them on payment of an annual 5*s.* fee. Will one of the authors of the Pharmacy Act of 1868 kindly explain to us what influences were exercised by which the extraordinary clause saving the rights of patent medicine dealers got into the Act. We hear a good deal of the influence of patent medicine makers, but we know very well that this is a myth. Why the Pharmaceutical Council of all bodies should play into their hands is unexplainable, except on the theory of their determination to represent any body rather than registered chemists and druggists. If the Council would take up the work earnestly, they might next session get a Bill through Parliament confining ssue of patent medicine licenses to registered chemists and gists. By the easy proof that many of the most popular hese contained poisons, the general sale of which was not rwise permitted, the principle of such a Bill would, of ssity, command success.

## DENTAL REGISTRATION.

conditions respecting registration under the Dentists' Act now been issued.

ersons who are able to declare that they were *bonâ fide* ged in the practice of dentistry on July 22 last, either rately or in conjunction with medicine, surgery, or pharx, may now make application for registration. The regis- Mr. W. C. T. Miller, of the Medical Council Office, Oxford Street, London, W., will supply the necessary form, all that is necessary is to fill this up, with a witness of the nature. On transmitting the paper, with the registration fee if sent before the end of the current year), the registration be effected, provided the details are satisfactory. The strar is, however, empowered to require, if he think fit, a utory affirmation from the applicant, and the latter, it ld be remembered, is liable to twelve months' imprisonment e attempts to procure registration by false or fraudulent esentation.

## CHLOROFORM.

controversy which has occurred in our pages between noted firms of chemical manufacturers respecting the ibility of distinguishing chloroform made from ethylic n that made from methylated alcohol is probably as yet inplete. It is not, therefore, our intention at present to pt the assumptions either of Messrs. Macfarlan & Co. or Messrs. Dunn & Co. But we are not inclined to wait longer re calling the attention of retail pharmacists to a practice which some of them have, in all probability, for some time been victims, and the existence of which has at least been gested by the discussion now proceeding.

he controversy on which we are commenting was started paper on chloroform read before the Liverpool Chemists' ociation by Mr. A. H. Mason, F.C.S. The main purpose hat paper was to show that chloroform carefully prepared n methylated alcohol may be, and probably is, as pure in y respect as if prepared, as the Pharmacopœia directs, from lic alcohol. Whichever is employed, a decomposition rs, and there is no reason to suppose that the elements can range themselves in the formation of chloroform more perly in the one case than in the other. Mr. Mason said his exence led him to the belief that not more than 40 per cent. the chloroform of home manufacture is made from ethylic hol, though he believes that a large quantity made from hylated alcohol is sold as pure, and probably is pure. Mr. son showed samples of chloroform to the meeting made from ylic alcohol, some from methylated alcohol, and some from tone, but the gentlemen present could not distinguish these examination.

Messrs. Dunn & Co., of London, however, in a letter which published in our June issue, while admitting the possibility perfectly purifying chloroform produced from any source, dored their ability to discriminate "easily and certainly" between mmercial samples of the "pure" and the "methylated." ey stated that on evaporation of, say, half an ounce from a d of cloth or filter paper the peculiar smell of methylated rit could be detected with ease.

On the appearance of this declaration Messrs. J. F. Macfarn & Co., of Edinburgh, challenged Messrs. Dunn & Co.'s ility to do what they had asserted they could do. For that purpose they offered to send samples of their commercial chloroforms for Messrs. Dunn & Co.'s examination on condition that a publication of their results should follow along with Messrs. Macfarlan's original statement of the origin of each sample. This letter was published on July 15. On August 15 we printed Messrs. Dunn & Co.'s reply, in which they intimated their willingness to meet Messrs. Macfarlan & Co., and discriminate between a Winchester quart of Duncan's "pure" and the same quantity of Macfarlan's "methylated." This was not an acceptance of the original challenge, and the result would not have been in any sense a satisfactory settlement of the question at issue. Messrs. Macfarlan & Co. naturally decline a test which would not be very different from trial by toss. They repeat their former challenge, and so the matter now stands between these two makers.

Now comes our point. In a general way, we presume, the makers do not supply the retail trade, who go to their wholesale druggists for their stocks. The latter quote in their price lists both "pure" and "methylated," the former at prices varying from 5*s.* 6*d.* to 6*s.*, the latter at from 2*s.* to 3*s.* The purchaser of the so-called pure probably gets exactly what he orders, but we want to know, does he always get exactly what he is led by those quotations to expect? Does he always get chloroform made from ethylic alcohol? In many cases we are confident that he does get it, but we have some reason to doubt whether such strict conscientiousness is invariably the practice. We may be unpleasantly suspicious, but suggestive remarks on this subject have been pretty frequent of late, and they are not altogether groundless.

The makers, as we have shown, are by no means to blame in this matter. They sell fairly enough chloroform from ethylic or from methylic alcohol, according to orders. Messrs. Duncan, Flockhart & Co., for example, have been declaring in our advertising pages for some months past, "We guarantee our chloroform prepared from methylated spirit to be *pure chloroform,* answering all the tests of the British Pharmacopœia, and Messrs. Macfarlan & Co. make a similar assertion. The dealer buys from these or other houses which product he chooses, paying the market price for either. Seeing that the two are undistinguishable, by ordinary persons at any rate, is it not possible that sometimes the price list and the label drawer are the only parts of the business in which the distinct products actually figure?

Before leaving this subject we may allude to the curious style in which an intended discussion thereon was shunted at the meeting of the Pharmaceutical Conference at Dublin. Several gentlemen were desirous of taking that opportunity of ventilating the question. A short paper was therefore prepared by Mr. Mason, and accepted. In the first edition of the programme this was placed not far below the middle of the list. In the second edition it had dropped to the bottom. The last few papers are always hurried through or "taken as read." In this case it was announced from the chair that Mr. Mason, finding the time too short to bring on his paper, had been good enough to retire it. The Executive Committee, if it wishes to hold a position entirely above suspicion, will explain by what influence it was persuaded to "keep dark" on a subject of so much interest and importance.

## SPECIAL AND COMMON JURORS.

THE list of the names of persons liable to serve as jurymen for next year are now exhibited on church doors, and by application to the parochial officers pharmaceutical chemists, and persons of 60 and upwards, can obtain the removal of their names, otherwise they will be liable to serve. To obtain exemption those who desire it should apply to the overseers.

## PHYSICIANS' FEES.

A SHORT discussion was admitted into the *Times* last month concerning the advance which certain London physicians are seeking to make in the scale of fees by which they are remunerated. We have on previous occasions alluded to this attempt, and it is not at all to be regretted that it has now been brought prominently before the public. The claim made is for two guineas for a first consultation; and in the letters lately published the fairness of this assessment was maintained on various grounds, which we will briefly examine. That "every man has a right to dispense his brains at his own price" is an axiom which was hardly worth printing. The complaint made was, in effect, that the charge was somewhat unexpectedly "sprung" on unsuspecting patients, who in many cases would be too proud or too nervous to express any surprise. If we go to a doctor knowing his charge to be two guineas, there is no more to be said. But even "wealthy city men," of that class which we hear so much and see so little of, who throw about their guineas with such lavish indifference, even these will not long buy the same article for 42*s.* if they find they get it at another shop for 21*s.* At present it is the fact that the very first among consulting physicians are contented with the simple guinea, and a goodly number of them have managed to settle themselves in decent comfort on that poor price.

"A London Physician's Wife" tells us that her "distinguished" husband's rent and taxes amount to 600*l.*; stabling, 60*l.*; butler, 60*l.*; cook, 30*l.*; meat, fish, game, &c., all dearer than when she and he started; water rate, then seven, now ten guineas; gas, then 3*s.* 6*d.*, now 5*s.* 6*d.* *per foot* (*sic*). How can all this be kept up on the beggarly guinea fees?—a problem which the "London Physician's Wife" would perhaps be surprised to know neither concerns nor interests the rest of the world. L. T. absurdly compares two guineas to the horrors of cancer, consumption, or such like scourges, and asks if the anxious inquirer, probably relieved from the horrible dread of these, would think the relief dear at two guineas? Of course, the same argument would justify fees of fifty guineas, and would give the druggist a fair claim to charge five shillings for every pennyworth of antibilious pills. J. W. tells how the physician now employs a variety of apparatus of the precisest accuracy, unknown years ago. On this basis any engine-driver has a right to all the rewards which rightly fell to the lot of Watt and Stephenson and their followers.

It is much to be desired that some of the medical journals should publish a list of the physicians who require two-guinea fees for first consultations. Those who so strongly desired a two-guinea man—and, according to the doctors themselves, there is such a class—would then be able to select him without much trouble.

## DRUGGISTS AND THE SALE OF FOOD AND DRUGS ACT.

THE reports of public analysts to the authorities who employ them very frequently contain such items as these in the abstract of samples analysed during a given period:—Two samples of drugs "entirely wanting of their principal ingredients;" five samples of drugs, three adulterated, and so on. We can say with much confidence that no chemist and druggist has been prosecuted for selling adulterated drugs whose case has not been reported in THE CHEMIST AND DRUGGIST. Our pages will, therefore, bear witness to the fact that in very few cases is the analyst's certificate considered sufficiently weighty to support a prosecution.

This being the case many will think that we should be content; that we have nothing to complain of. But when the analyst presents his report it is published to all the world. It is commented on by newspaper writers who can have but little knowledge of the real state of pharmacy. It is read by thousands who, with knowledge no whit better than that of the newspaper correspondent, do not possess even his proverbial intelligence. The recent report of the Liverpool analyst would lead such to believe that all the drugs sold in the country were impure, and until the method of publication is in some way altered, the belief is quite justifiable. Did the analyst state that Mr. A. B. sold two samples of drugs, both of which were adulterated, it would be possible by a charge of libel to force him to reveal the grounds of his statement, and to secure compensation if the charge was found to be badly grounded. If X. Y. Z. & Co. (Limited) were attacked, the same remedy would be open to them. But in the present state of affairs, any analyst by the accident of his position has a periodical opportunity of publishing most injurious statements, damaging the character of a large body of tradesmen. These statements are indefinite; it is impossible to know who are the offenders referred to; the grounds of the charges may be most flimsy and unreliable, and yet we are to have no opportunity of answering them.

We contend that when a drug is found to be adulterated the vendor should be prosecuted, but that when so little reliance is placed on the verdict of the analyst that those in authority refuse to prosecute, then should it not be published to the world that of so many drugs analysed a large proportion were adulterated? The conviction of a dozen chemists would not injure the trade a tithe as much as these continued unsupported innuendoes.

## THE INFLUENCE OF ATMOSPHERIC ELECTRICITY ON THE NUTRITION OF PLANTS.

A NEW and important fact, likely to be of great value in agricultural and horticultural science, has been apparently established by a series of observations made by M. L. Grandeau, a professor at the Ecole Forestière of Nancy. His experiments were as follows:—

Two plants of tobacco, of exactly corresponding weight, and each with four leaves, were planted on April 7, 1877, under identical conditions of soil, air, isolation, &c. The only different condition was that one of the plants was covered with a Faraday's cage, which, while permitting the free and full circulation of air and light, excluded from the enclosed space the action of atmospheric electricity. These plants were allowed to grow until August 7, when they were taken up, carefully cleaned, weighed, and measured. The one covered by the cage weighed in its fresh state 140 grammes; the one left free weighed 273 grammes. Dried, the plant from under the cage weighed 15·5 grammes, the other 30 grammes. Height of the first, ·69 metre; of the other, 1·05 metre. The first had 1 the second 14 leaves. Some Caragua maize was next planted on the same spots. In two months, however, signs of frost appeared, and the experiment had to be prematurely finished. A difference of nearly 50 per cent. had been by that time established between the two specimens. Lastly, some Chiddam wheat was planted on November 7, 1877, and cut on May 25, 1878. In this case, to prevent any chance of mistake, the caged plants occupied the ground where the free ones had previously stood, and *vice versâ*. When cut, the stems of both measured 40 centimetres in height. Those under the cage had a poor look, and the six finest stems weighed 4·95 grammes: the six best stems of the others weighed 6·57 grammes.

Writing in the last number of the *Journal de Pharmacie et de Chimie*, M. Bertholet claims that these observations of M. Grandeau have confirmed some previous experiments of his own, which went to show that free nitrogen fixed itself on organic matter under influence of electricity. He had thus, by a constant application ı feeble current, in seven months fixed a proportion of ·00192 paper and dextrine, which would be equal to ·012 of the tised matter of plants. But M. Bertholet's self-congratula- ɔs seem a little premature: for M. Grandeau's analyses w that the *proportion* of nitrogenous matter is much the ıe in both cases. In the tobacco, in fact, he found ·81 per t. of nitrogenous matter in the plant which had been grown ler the cage, and only ·77 per cent. in that which had grown hout obstruction of electricity.

## ZEAL WITHOUT KNOWLEDGE.

R friends on the *Medical Press* are apt to froth over occa- ıally, and especially when the sins of pharmacentists are ler discussion. Last week they have a leading article extend- to two pages, based on Professor Tichborne's paper on "Drug ulteration," read before the British Pharmaceutical Con- ɔuce.

> he facts narrated by Professor Tichborne, says this Saint Medicus, are able of neither dispute nor explanation, and are such as to provoke the ignation of honest men and to shed disgrace upon the class of pharma- tists who are guilty of these practices.

The facts, as they are understood by the writer of the article, such as to provoke the merriment of all intelligent people, l to shed contempt upon the practice of journalism, which to ery large extent means criticising what one does not under- nd. "We invite our readers to reperuse the paper." Pity s gentleman did not accept his own invitation. These are alleged discoveries of Professor Tichborne:—

> le found that powdered hæmatite ore was sold as peroxide of iron, ure phosphorus made from bone-dust and oil of vitriol, linseed made n pressed grape refuse, pure colocynth almost impossible to obtain, and proportion of active principle in the commercial specimens varying ween 14 and 2½ per cent.

Now three out of those four assertions are inaccurate, and uld be repudiated by Professor Tichborne himself. He had found—he had only heard—that powdered hæmatite ore was d as peroxide of iron; he did not say that impure phosphorus s made from bone-dust and oil of vitriol; and he certainly not go into such a paroxysm of lunacy as to assert that lin- d had been made from pressed grape refuse. The last covery is so richly comic that we look forward with some gerness to the good time coming when the writer shall, as he omises, "return to the subject."

## ANTIDOTE TO CO-OPERATIVE TRADING.

E have been favoured with a letter from Major de Winton, king us to assist in a movement with which we presume he associated, and which is intended to counteract the ruinous fect of the co-operative stores on ordinary trading. The ajor says he approached the question from a social point, at many interviews with those best qualified to judge have nvinced him that it is in a commercial sense it must be eated. Deploring as a politician the apathy of those whom would benefit, he proposes to carry his benevolent aims rough by means of a Cash Trading Register and Discount irectory, in which tradesmen can insert their names, addresses, d occupations at the nominal fee of one guinea for one nnouncement and 10*s.* 6*d.* for each subsequent appearance of e name. This cash-trading-register-and-discount-directory is be circulated in the clubs and among the upper classes, will produced in elegant form, and is intended for duchesses to fer to every time they go out to buy their candles. Major de inton "ventures to solicit our good offices in favour of this movement with the branch of trade ably represented" by our journal.

We know nothing of this scheme except what we read in the circulars before us, and our only reason for reviewing it unfavourably is that we fail to see anything in it except a new method of catching guineas. It appears that any one who may please to send his name and his guinea will be inserted in this register. What guarantee is the purchaser to have that he will get goods from the shops specified at co-operative prices? A list of "eminent firms" is given, who are said to sympathise with and support "this important movement." Are we to understand from this that Messrs. Lewis & Allenby, Messrs. Dinneford & Co., Mr. Truefitt, and the rest are ready to accept co-operative rates of profit?

## REVIEWS AND Literary Notes.

*Essays on Ear and Throat Diseases.* By Dr. Llewelyn Thomas, of the Central London Throat and Ear Hospital. (London: Churchill.)

In this small volume we have several essays, some of which have already attracted attention, from the pen of a surgeon who is an unquestioned authority on the subject upon which he writes. Dr. Thomas directs particular attention to the frequent neglect of slight deafness in young children, with whom often a life-long affliction might be prevented. He also maintains that a discharge from the ear is of much more serious importance than is generally supposed. His essays on the throat refer mainly to the tonsils and uvula, and bring forward very clearly and minutely the results of his own experience in operations on these organs. The book is rendered more serviceable by a series of engravings illustrating the most necessary instruments for the ear and throat surgeon.

*Nelson's Handbook of Private Formulas for Druggists.* (John H. Nelson, Cleveland, Ohio, U.S.).

THE above has been sent to us with a request that we would receive orders for it. These volumes of formulæ are, no doubt, very tempting to a great many chemists, but they need to be bought with some degree of caution. In this instance we cannot help thinking that an immoderate price has been affixed to the book, a circumstance which we feel ourselves bound to place in the front. Beasley gives something like a couple of thousand formulæ for six shillings; this gentleman asks double that price for about five hundred. The selection certainly contains some novelties, but the majority of the formulæ are old friends. The author claims to give only such as have been tested and found reliable. Some persistent collectors of formulæ may, however, like to have a copy of this work, and, if they wish it, we shall be happy to transmit their orders to the author on receipt of 12*s.* 6*d.*, which will cover postage.

MESSRS. CASSELL, PETTER & GALPIN have sent us samples of their Trade Almanacs for 1879. There are four varieties, all on crown octavo paper, and three of them well illustrated. They are supplied to tradesmen (two of the same kind are never sent to one town) at a very moderate price, and in such a form that a wrapper and business advertisements can be added, Messrs. Cassell's name not appearing at all. Each of these almanacs is full of interesting literary matter, which will ensure its popularity in any household, and, by the addition of some local information and advertisements, a really useful present can be distributed to customers. Messrs. Cassell & Co. offer to arrange for some London advertisements with purchasers who would like to have these. Those who would like to make their present still more welcome can add to the almanac a collection of scraps published uniform with the rest, and entitled "The Literary Companion."

Mr. Louis L. Smith, L.S.A., of Melbourne, sends us a small pamphlet "On the Nature and Treatment of Gout," a disease which he claims he can cut off in 12 to 16 hours, and leave the patient all right. He has had personal experience both of the disease and the remedy. Gout, according to him, is urate of soda, which the kidneys will not excrete, and his special discovery is that this is a specific poison to certain veins. His specific medicine—which carries this out of the system and prevents its formation—will be revealed when its discoverer has acquired so much reward for his skill as he thinks is his rightful due.

## NEW BOOKS,

### Botany.

| | |
|---|---|
| Botany of Three Historical Records: Pharaoh's Dream, the Sower, and the King's Treasure. With illustrations. By A. Stephen Wilson. Post 8vo., pp. 118 | 3/6 |
| Synoptical Flora of North America. Vol. 2, Part I.: Gamopetalæ after Compositæ. (In continuation of Torrey and Gray's Flora of North America.) By A. Gray. Royal 8vo. New York. | 21/ |

### Chemistry and Physics.

| | |
|---|---|
| Handbook of Modern Chemistry, Inorganic and Organic. By C. Meymott Tidy. For the use of Students. 8vo. Pp. 778 | 16/ |
| Physical Technics; or, Practical Instructions for making Experiments in Physics, and the Construction of Physical Apparatus with the most limited means. Translated by J. D. Easter. By J. Frick. New edit. Illustrated. Crown 8vo. Philadelphia | 12/6 |
| Elements of Natural Philosophy. By E. M. Avery. 12mo. New York | 6/ |
| Manual of Introductory Chemical Practice. By G. C. Caldwell and A. A. Breneman. 8vo. New York | 9/ |

### Commercial.

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| Handbook of Patent Laws of all Countries. By W. P. Thompson. 3rd edition. 12mo. | 2/6 |

### Materia Medica, &c.

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| Sokotra: A Description of the Island. With Map. By Phil. Robinson. 8vo. | /6 |

### Medicine, Surgery, Hygiene, and Dietetics.

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| The Throat and its Diseases: A Practical Guide to Diagnosis and Treatment. Illustrated by L. Brown. Royal 8vo. | 18/ |
| How to Get Thin; or, Banting in India. By J. Duke. Crown 8vo. | 2/ |
| What Shall I Eat, &c.? Queries at a Mess Table. By J. Duke. 12mo. | 2/6 |
| Laws of Therapeutics, the Science and Art of Medicine. By J. Kidd. Crown 8vo. | 5/ |
| Hydropathy: Its Principles and Practice for Home Use, chiefly intended for Mothers and Families. By A. Hunter. Post 8vo. Pp. 380 | 5/ |
| Onimus, Medical Electricity. By A. De Watteville. Illustrated. 8vo. | 5/ |
| Domestic Medicine and Hygiene: Being a Short Account of the more Common Diseases, their Causes and Treatment, written in Plain Language. By W. J. Russell. 32mo. Pp. 408 | 2/ |
| The Influence of Posture on Women in Gynecic and Obstetric Practice. By J. H. Aveling. 8vo. Pp. 184 | 6/ |
| Lithopraxy; or, Rapid Lithotrity, with Evacuation. By H. J. Bigelow. 8vo. Pp. 42 | 4/ |
| How to Take Care of our Eyes. With Advice to Parents and Teachers in regard to the Management of the Eyes of Children. By H. C. Angell. 16mo. Boston | 2/6 |
| Thermic Fever, or Sunstroke. By H. C. Wood. 12mo. Philadelphia | 6/ |
| Transactions of the American Gynecological Society. Vol. 2, for the Year 1877. With 12 Chromo-lithographs and other Illustrations. 8vo. Boston | 32/ |
| Physics of the Infectious Diseases, comprehending a Discussion of certain Physical Phenomena in connection with the Acute Infectious Diseases. 12mo. Chicago | 7/6 |

### Veterinary Medicine, &c.

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|---|---|
| History, Structure, Economy, and Diseases of Sheep. By W. C. Spooner. Fcp. 8vo., pp. 366 | 3/6 |

Mr. Fairlie (Glasgow) quotes in our present issue a reduced price list of the American Recess Labelled Bottles, for which he is agent. These are quite worth the attention of chemists fitting up new shops, as the appearance is very striking and the style has an economic advantage, in that the label cannot get soiled or injured. The bottles for poisons are distinguished by a rustic cover, which makes them quite effective for their purpose and picturesque withal. The toilet and show bottles are of great beauty.

## Correspondence.

### CHLOROFORM.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Dear Sir,—That Messrs. Dunn & Co.'s letter in your Augus issue shows a change of ground must, we think, be evident to everyone who has read the correspondence on this subject. From being able with half-ounce samples "to discriminate easily and certainly between commercial alcoholic and methylate chloroform," they now take refuge behind two half-gallon bottles of two different makers' chloroform, and reiterate that, "they can discriminate easily and certainly between pure and methylated chloroform. Just a word in passing on this reiteration, to show how inconsistent it is for them to use it without qualification. In your June issue they say, "Of course we are quite willing to admit that chloroform from *any sour* (the italics are ours) could be so purified that it would be impossible to discover from what it was made." This stateme and their reiteration do not agree; may we ask how they wou discriminate between alcoholic and methylated chloroform, "so purified that it would be impossible to discover from what i was made"?

But to the point. Until compelled we have no intention of entering the new field they wish to open, nor do we purpose leaving the position we at first took up; but, lest there should be any further mistake as to what that position is, we beg to draw their attention to our first letter, where they will find that, after doubting their powers of discrimination, we offer them "*our* commercial chloroforms," which clearly shows that at the time our letter was written we had no intention of upholding *all* commercial chloroform against their assertion. If they wish to dispute this position, we again, and for the last time, offer to send them half-ounce samples of our commercial chloroform. On receipt of their acceptance, they shall be forwarded to them, and at the same time a sealed statement of their origin will be sent to the Editor of The Chemist and Druggist, who wi perhaps be kind enough to retain it until Messrs. Dunn & Co. have finished their examination, when an arrangement can be made with them and our London representative to meet in your office for the purpose of opening and comparing our statement with theirs.

In conclusion, we hope this correspondence will be productive of some good result, but we decline to continue it unless r offer is accepted.

Yours truly,
J. F. Macfarlan & Co.

93 Abbey Hill, Edinburgh, August 26, 1878.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—One of the statements in my paper on chloroform, published in the May issue of your journal, being disputed by Messrs. Dunn & Co. in the June issue. Messrs. J. F. Macfarl n & Co. take opportunity to substantiate my assertion, and challenge Messrs. Dunn & Co. to disprove it by a plan which I am prepared to assist in by placing the six samples which were on the table when my paper was read at your disposal f r examination by Messrs. Dunn & Co. In the editorial comments of your August issue, p. 329, you state, "Messrs. Dunn & Co. have accepted the challenge offered to them by Messrs. Macfarlan & Co. to distinguish samples of chloroform made from methylated spirit from others made from rectified spirit." Reference to the letter from Messrs. Dunn & Co. in your August issue shows that they do anything but accept the challenge; they simply undertake to discriminate the asserted difference by a proposal which looks very well to the uninitiated. I accept their proposal, and will undertake the discrimination blindfolded, and without removing the stoppers from the bottles. It will be well known to the trade that there is a marked difference in the appearance and shape of the Winchester quarts used by Messrs. Duncan, Flockhart & Co. and those used by Messrs. J. F. Macfarlan & Co., so that unless the original hallenge or mine is accepted we can only doubt the validity of Iessrs. Dunn & Co.'s simple test.

Through the courtesy of Messrs. Dunn & Co. I have received amples of their chloroform prepared from rectified spirit and iethylated spirit. I consider the chloroform from methylated pirit superior, having a higher specific gravity.

I enclose a certificate, as it speaks for itself. Kindly publish with this letter, and oblige,

Yours faithfully,
ALFRED HENRY MASON.

Liverpool, September 5, 1878.

[COPY OF CERTIFICATE.]

We hereby certify that at the request of Mr. Mason we endeavoured discriminate between two samples of chloroform—amongst others in the llowing manner:—Eight folds of filtering paper were saturated with the loroforms, and we examined them repeatedly until evaporation was mplete. We were unable to distinguish any difference whatever, both mples were entirely free from any but the natural odour of pure chlororm.

We are brought in contact with samples of chloroform almost daily.

(Signed) ROBERT G. SMITH, A.P.S. FREDERICK W. BURD.
I. A. WALSHE. S. G. AULD.

I certify that the samples submitted for the above examination were ose supplied to me by Messrs. Dunn & Co., and labelled respectively Chloroform from rectified spirit," "Chloroform from methylated spirit."

Liverpool,
August 23, 1878.
ALFRED HENRY MASON.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—In the June, July, and August numbers of THE CHEMIST ND DRUGGIST I find some notes concerning the tests for iethylated chloroform. I have been much occupied to find a ure reagent to distinguish between chloroform prepared from ure spirit and chloroform prepared from methylated spirit, and short time ago I was able to do so thus:—If a solution of itrate of silver (1·7 : 100) be mixed with ten times its volume f ether or chloroform prepared from methylated spirit, and llowed to stand for a few days, shaking it now and then, it vill form a deposit of a reddish-brown colour (oxide of silver), nd the zone between the two liquids will show the same colour. The solution of nitrate of silver added to pure ether or chlороorm gives no colour at all. A sample of methylated chloroform btained from Messrs. Baiss Brothers & Co., subjected to the ame treatment, gave the reaction of pure chloroform.

84 Leman Street, E. H. W. LANGBECK.

[As we understand our correspondent, the sample of so-called nethylated chloroform last referred to did not yield the characteristic reaction previously described. This shows it is at east perfectly possible to purify the product. The test given nay, however, be a valuable one to detect the presence of methylated alcohol or some of its occasional chemical congeners. —ED. C. & D.]

## ON THE DISAPPEARANCE OF CERTAIN WILD PLANTS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—The following notes were dotted down during a it of gout some time ago. If you think them worthy of a corner n your much-esteemed journal they are at your service, and hey may encourage others of your botanical readers to recur to he subject and to favour us with their own observations. Besides, surely the subject is worthy of our consideration in a commercial point of view: *e.g.*, the total extinction of *Hyoscyamus niger* from this neighbourhood compelled me to grow my own, and could I have foreseen the enormous high price the eaves recently commanded in the drug market, I certainly hould not have thrown away some thousands of plants which eradicated twelve months ago.

Behind my residence is a long grass field: eight years back it was overrun with *Geranium dissectum* (jagged geranium), *Alchemilla arvensis* (parsley-piert), *Matricaria inodora* (mayweed), *Ononis campestris* (rest-harrow), and *Bartsia odontites* (red bartsia); now there is not a vestige of any of them. Between this field and my garden is a large pond: formerly it was surrounded by *Epilobium hirsutum* (codlins and cream) and *Lythrum salicaria* (purple loosestrife)—and a beautiful sight it was at this season of the year; they, too, are *non est*, and their places are now occupied by *Alisma plantago* (water plantain) and a species or two of *Typha* and *Sparganium*.

The old inhabitants here inform me that two generations ago *Menyanthes trifoliata* (buckbean) was so plentiful in all directions that it was quite a nuisance wherever the ground was at all spongy or boggy. At the present moment I only know of one habitat for it, and that is four miles away. But in this case the mystery is readily explained: buckbean vanished along with bad farming—draining and high culture are antagonistic to its growth.

The "Flora of Liverpool" (a work published about 25 years ago) embraces an area of about 18 miles round. The author, Dr. Dickenson, tells us that *Hyoscyamus niger* grows abundantly at Hoylake and Sarkgate. These two Cheshire watering-places form a triangle with Newferry, of about nine miles apart, and comprise the greater part of the "Cheshire Peninsula," in the Hundred of Wirral. Now, for the last ten years I have carefully searched there, and almost every intervening acre of ground, without finding a single henbane plant. I found my first and only specimen the other day, growing, of all the places in the world, out of the cinders which form the surface of the Chester and Birkenhead Railway here, and only 6 feet from the iron rails! It was a monstrous plant, measuring 4½ feet in every direction, with a stem as thick as my wrist. As this portion of the line is a huge "embankment," it is not difficult to guess how the seed originally got there.

For several years previously, and in 1874, I gathered my stock of *Digitalis purpurea* (foxglove), *Nepeta glechoma* (ground ivy), and *Lysimachia nemorum* (yellow pimpernel) in a large wood two miles away. In the following year, 1875, sunlight was let into it by felling a large number of trees; since then I have looked in vain for any of the trio: their sites are now occupied by *Mercurialis perennis* (dog's mercury), and *Lychnis diurna* (red campion), which have sprung up spontaneously.

Four years ago a field of wheat here was so overrun with *Matricaria chamomilla* (wild chamomile) and *Anthemis arvensis* (corn chamomile) that it was difficult to decide which was the best crop of the three. I looked the field over last week, and could find neither the one nor the other of these composites; but, on going about half a mile to the eastward, I found another corn-field in exactly the same state as the first. Here I found these chamomiles for the first time, after botanising over it for ten years. Now, as our prevailing winds are from the west, I could readily understand them drifting from one field to the other, providing they were pappus-bearing plants: but they are not. How, then, are we to account for the phenomena?

Within rifle-shot of here there is an immense pond, where you might have harvested *Lycopus Europœus* (gipsywort) and *Mentha aquatica* (water mint) by the cart-load. The former is as abundant as it ever was; but, on visiting the spot last week, to my great astonishment I could not find a single specimen of the mint. This puzzles me more than all the rest put together, because for more than 25 years it has been known to flourish round this pond, to bloom and die down, and shed its tiny nutlets by the myriad.

I could extend my observations *ad nauseam*: but enough for the present. I am very far from being a believer in "Abiogenesis," but still there are many astounding facts in favour of it. We are told, for instance, that after the great fire in the three sixes (1666) London became covered over with *Trifolium repens* (white clover). I could imagine there were plenty of agricultural seed shops in the metropolis before the fire, and that the seed might probably be widely scattered about in certain places, but what about that very rare cruciferous plant, the *Sisymbrium Irio*, which history tells us was equally distributed at the same time, and which has gone by the name of the "London Rocket" ever since? We must, I think, pass over the seed shops and look for the cause a little further, although it does not solve the mystery altogether. It is a well-known agricultural fact that after the application of bone manure to grass land a plentiful crop of white clover invariably springs up, and from the great number of people who perished during the dreadful conflagration there would be no lack of bone ashes among the ruins. How lime and its phosphates produce *Trifolium repens*, *sans* the clover seed, I must leave Messrs. Bastian and Pasteur to decide. It is a most interesting fact that it does do so. I believe my brother-in-law, the late Edward Lee-

Bellasyse, of the Chirkcastle and Combermere estates, was the first gentleman who applied bone manure to grass land in this country. He applied it to a field of his own, and although it is nearly 40 years ago, the field still goes by the name of the "Bone Field," and it can be distinguished from its neighbours for miles around by its beautiful herbage of fine grass and clover, and by its inherent perpetual verdure, reminding you strongly of an oasis in the desert.

I am, faithfully yours,
HENRY HIGGINSON.

Rose Villa, Newferry, Birkenhead.

## "CUTTING" IN THE DRUG TRADE.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I was very pleased to read in your issue of last month the outspoken remarks of "Hampshire" on the above subject, and trust the assistants of the day are grateful for his advice, and that they will act upon it. I, for one, shall certainly do so. Did the public but know the danger they run in purchasing cheap drugs—particularly of grocers and others who know nothing of our trade—I think many would hesitate before doing so; and this suggests the question, How can they best be informed?

I am, yours obediently,
BERKSHIRE.

## FLY PAPER.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—A few days ago, passing a grocer's shop, I noticed in the window a basket containing dried apples, partly covered with fly paper. As I am aware that fly paper is generally impregnated with arsenious acid, and the sale of it, therefore, prohibited to not registered persons, I wondered at the generosity of public analysts in overlooking such an offence, although they like to feast upon chemists and druggists. I purchased some of the paper, and in the preliminary essay with the Marsh's apparatus I saw my supposition confirmed—a large amount of arsenic was present. In order to ascertain the real amount of it, I proceeded as follows:—

One sheet of the paper, weighing 5·4 grammes was, digested with distilled water, to which a few grammes of bicarbonate of potash were added, the solution filtered, the same operation repeated four times, and the obtained liquid diluted up to 500 cc. 100 cc. of it mixed with freshly-prepared mucilage of starch required 10 cc. of one-tenth normal volumetric solution of iodine, corresponding to 0·225 grammes = 4 grains of arsenious acid. A paper purchased the same day in an oil shop contained also a large amount of arsenic.

84 Leman Street, E. H. W. LANGBECK.

[The presence of arsenic in fly papers was observed by Mr. Sydney Plowman, and his statement in respect thereto was published in the *Pharmaceutical Journal* of June 22. His experiments indicated the presence of arsenic in five samples out of six which he examined, the sixth (Papier Moure) being free from it.—ED. C. & D.]

## THE PROVERBIAL BAD NAME.

We have been asked to publish the following correspondence:—

[COPY.]

Chemists and Druggists' Trade Association of Great Britain,
23 Burlington Chambers, New Street, Birmingham.
September 2, 1878.

Henry Peake, Esq., Pharmaceutical Chemist, New Bridge, Dover.

DEAR SIR,—I observe in the last issue of the *Pharmaceutical Journal*, under the report of the quarterly meeting of the Dover Chemists' Association, you, as chairman of the meeting, are represented as having said:—"That the Pharmaceutical Society was hardly to blame for not undertaking the defence of Mr. Shepperley, since it appeared that he had made a practice of visiting."

I shall be obliged if you will inform me on what authority you stated that Mr. Shepperley has made a practice of visiting—the assertion, as far as I am aware, is wholly incorrect.

My apology for thus troubling is, that as Mr. Shepperley is the defendant in an action brought against him by the Apothecaries' Society, which case is being defended by this Association, and is still *sub judice*, such a statement if allowed to pass unchallenged would obviously damage the defendant's case, and tend to bring obloquy on the Executive of the Association for having undertaken the defence of a member who had exceeded the legitimate bounds of the business of a chemist and druggist.

I need scarcely say that this communication is of a public nature, and that any reply with which you may favour me will be published, to correct the false impression which your statement may have created.

I am, dear sir, yours faithfully,
(Signed) W. F. HAYDON, Secretary.

[COPY.]

New Bridge, Dover, September 5, 1878.

DEAR SIR,—I beg to enclose you copy of a letter sent to-day to the editor of the *Pharmaceutical Journal* for publication, which will explain the nature of my remarks, and remove anything in them that may appear prejudicial to Mr. Shepperley's case.

I am, dear sir, yours faithfully,
(Signed) HENRY PEAKE.

Mr. Haydon, Birmingham.

[COPY.]

1 New Bridge, Dover, September 5, 1878.

To the Editor of the *Pharmaceutical Journal*.

SIR,—My attention has been called to a report of the quarterly meeting of the Dover Chemists' Association, in which I am stated, as chairman, to have said, that "the Pharmaceutical Society was hardly to blame for not undertaking the defence of Mr. Shepperley, since it appeared that he had made a practice of visiting, which I considered unjustifiable."

I am not responsible for the conversation having found its way into public print, nor had I the least idea that it would do so, more especially as the case alluded to is still *sub judice*.

I therefore withdraw the assertion attributed to me, that Mr. Shepperley had "made a practice of visiting," and I would further say in explanation of the remarks I am reported to have made, that having in mind the letters of Mr. Upton, the Solicitor to the Society of Apothecaries, addressed to Mr. Flux on January 1, and February 5 last, and published in your journal of February 9, I felt the *inference* was, that Mr. Shepperley "visited," but had I have known that my remarks, made in a conversational way, would have been published, I should have abstained from taking any part in the discussion.

I am, sir, your obedient servant,
HENRY PEAKE.

## IS A LABOURER OF PHARMACY WORTHY OF HIS HIRE?

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Looking at the *Pharmaceutical Journal*, September 7, I saw a piece of correspondence from a doctor, expressing his opinion on the one hand, what the medical man should do, and, on the other, what the chemist and druggist should do. He first of all thinks that counter prescribing could be easily remedied if chemists would not give advice to their customers upon any pretext or circumstance whatever. Well, sir, if a man has got a touch of a sore throat or the finger ache, is he to be obliged to go and see a doctor when, without so much delay, he could obtain relief from a chemist? If the person were seriously ill, the chemist would naturally say, "By all means go and consult your doctor." The good man, whoever he may be, then goes on to draw up a price list showing what the chemist should charge for different-sized bottles of medicine; for instance, an 8-oz. bottle, 1*s.*; 16-oz. bottles, 2*s.*, and so forth. Would not the chemist get rich if such preparations as quinine, &c., were ordered? I think medical men want to get all the tin, and the poor pharmacist can go to the dogs.

I am, Sir, yours truly,
Wood Green, N. A. F.

## QUININE WINE.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Dear Sir,—Your first paragraph in this month's issue informs us that, "According to a very recent decision of the Board of Inland Revenue, all persons selling quinine wine not prepared according to the Pharmacopœia must obtain a British wine licence, or render themselves liable to prosecution." The justice of this decision cannot be doubted as regards those preparations called quinine wine which fall below the Pharmacopœia standard in the amount of alkaloid they contain, and it is questionable if paying such licence would protect or justify the vendors of such an article under an official name. But it appears that conscientious makers who use the full quantity of quinine, but who do not believe in the perfection of the Pharmacopœia process, are also in danger, and if so this is a more serious matter, and would point to a further reason why Pharmacopœia processes should be the most perfect that can be devised. In the present instance citric acid is ordered for the purpose of dissolving the quinine, and this renders the product such as to be unsuited to certain delicate stomachs which cannot take an acid wine, and in most instances it is preferred without such addition. Pharmaceutically the acid is quite unnecessary; indeed, it renders the wine more liable to deposit or become turbid. We may hope, therefore, that in a future edition of the Pharmacopœia, which is due at no very distant date, it will be omitted.

Faithfully yours,

Liverpool, August, 1878. Charles Symes.

## THE PHARMACEUTICAL SOCIETY AND ITS MISSION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—Quoting from a letter in your last month's issue on "The Pharmaceutical Society and its Mission," I am one of those who think that "the Society was made for the chemist," but I consider the chemist is himself to blame for not having made use of it, and for allowing it to become our doubtful friend. Whatever may have been the origin of the Society, there came a time when the early members saw it to their advantage to make it exclusive, and those who then permitted it, and stood aloof, have themselves only to blame for being shut out. In 1861 a new society was formed, aided greatly by the proprietors of The Chemist and Druggist journal, which aimed at placing all chemists on a trading equality with members of the older society. After several years of agitation, combating the pretensions of the pharmaceutical chemist to superiority over all others, two Bills were introduced into the Legislature—one especially intended to exalt the Pharmaceutical Society, the other to advance the prosperity of the whole trade. Those who had charge of the two Bills were advised to come to terms and agree, so that an Act might be framed which should have the support of both parties. The United Society demanded an *equal* number of seats on the Council for non-pharmaceutical chemists. This the leaders of the Bloomsbury institution strongly objected to. A compromise was effected, giving to those who were not then either pharmaceutical chemists or members of the Society the privilege of sending to the Board *a third* of the Council, and the opportunity of joining the Society without examination. Here, then, was an opening for the trade to use the Society for its own purposes and benefit. Here was an opportunity to place seven members—who were not West-end dispensers, allied to the medical profession—on the Board who might have watched over the interests of the trade, and not have permitted the institution to drift into its present perverted state. What was the result? One or two hundred outsiders became members—a number totally insufficient to exercise any influence on the voting, and the consequence was the Council continued to be composed as before. And it was only when the poisons question created another division of members that an outsider obtained a seat at the table; and thus the trade, through its own apathy and unwillingness to govern itself, has allowed the Pharmaceutical Society to get on its back, and ride it to ruin. It has been said, perhaps as a compliment and testimony to the industrious habits of the pharmacist, that "you cannot get him from behind his counter unless you set his house on fire." Surely, then, now is the time for him to step out, for there never has been a time when destruction was so clearly over his head as at present. His business is getting too hot to hold him. There is the pharmaceutical engine capable of rendering every assistance, but unfortunately those at the handles are pumping paraffin on the flames. It wants a fresh main, and all hands to the pump, to put out the conflagration. Why does not the outside trade step in and take possession of the pharmaceutical extincteur? It can do so if it will. Why will not those who have hitherto held themselves apart qualify for voting by becoming members of the Society? Let them nominate the executive committee of the Trade Association, and others equally suitable, for councillors at the next annual election, and let every man record his vote in favour of those who will stand up for the trade. The Society has been too long governed by one class of pharmacists, who have learned to regard the councillorship as an inheritance, and as long as they are permitted to glory in their illegitimate patrimony the chemist will be prevented from holding his own. The Society's Council, as now constituted, is in direct antagonism, not only with outsiders, but with its own members also. These have the power, if they will use it, to alter the present government, and totally to revolutionise the Society, and to build upon its site a recognised representation of all engaged in pharmacy. The editor of the journal naturally represents the leading influence in the Council, and receives his information from those in power holding a majority, but I have no doubt, being neutral so far as his own predilections go, would act the same if the opposite party made themselves predominant. It matters not to the editor what he upholds so long as he knows he is giving satisfaction to those who vote him to his post; and who can blame him? Then let the trade wake up to the fact that they have a remedy in their hand. By entering the Society they will swell the numbers of those who could remove the obstructives and place men on the Council who would be willing to allow that "the Society was made for the chemist."

John Wade.

174 Warwick Street, Pimlico, S.W.
September 7, 1878.

## THE MODERN APPRENTICE.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—If Mr. Schacht depicted his own experiences in his presidential address to the Conference he should consider himself one of the most favoured of mortals. Lest the pharmacists of the next century should regard that address as a picture of the state of pharmacy in 1878, allow me to record some of my own recent experiences. When between 15 and 16 I left a large school with a fair knowledge of Latin, French, chemistry, and the other ordinary branches, and was apprenticed for five years to a leading chemist in a third-rate city. My master was looked up to both in the neighbourhood and in London as one of the bright and shining lights of pharmacy. I copied from no prescription books, but my first and only lesson in the terminology of pharmacy was given me by an "improver," who asked me if I knew Latin, sniggered when I stumbled over extr. hyoscyami, and fairly roared when I translated tinc. prun. virgin. as tincture of virgins' prunes. My first piece of work was to act as secretary during stock-taking. The premises were very old and dirty, and the stock was large, and of what I have since learned to be a most extraordinary variety. Imagine my success in reducing to writing the names of thousands of articles I had never heard of, shouted to me by hurried assistants. Next I had to wash up the utensils of the chemical laboratory. These were of glass of strange forms, and the time was winter. Can it be wondered that many were broken by my unskilful fingers? This employment served me with occasional turns at pounding in iron mortars, for about nine months, when the above-mentioned improver improved himself away. I then took his place, with the scantiest instruction, as the maker of the tinctures and a few other galenicals made on the premises, and of the cold creams and many other toilet requisites which we sold. We made preparations, not that we might be sure of the integrity of what we sold, but simply with the idea that we could make more cheaply than we could buy—at least, I never heard any other reason alleged. This work occupied me for four years longer. I soon found that the reason I was not allowed or required to dispense was that my help was not wanted. Assistants were kept who could generally, with the aid of the principal, do all of this work. That this was the sole reason is clearly proved by the fact that on market days, when the work was unusually pressing, I was called in and set to dispense any prescriptions that turned up.

What book learning I acquired I owe, not to the encouragement of my master, but to a tolerably large pharmaceutical library, chiefly collected by his predecessor, of which I was tacitly allowed the run. My schoolmaster had given me a love of science and of study, so I soon became familiar with all that is required for the Minor and a considerable surplus which could be drawn on at an emergency. I passed my Minor in the second year of my apprenticeship, before I was eighteen. On parting I cannot say that my master gave me any advice; in fact, I had to ask him three times for my indentures, and our conversation did not wander beyond that subject. His interest in my studies was confined to a casual remark about once in a year. It is true that my interest in his business was not excessively great, still I think it exceeded his interest in my progress and welfare, and to my astonishment he gave me a good character when I left. I am, therefore, forced to believe that either his personal and deputed scoldings or his character of me were exaggerated. It seems to me the natural sequence that the master, by his interest in his apprentice, should awaken the reciprocal interest of the latter in the business. What I have learnt from my fellows leads me to believe that very few masters realise the fact that the indentures of an apprentice impose on them a real and weighty obligation.

I am, sir, your obedient servant,

TIMOTHY TOBIN.

[We confess to a certain degree of sympathy with the master in this case. Wherein had he failed in his duty? He does not seem to have kept his apprentice in a constant fever by systematic instruction, but he provided him with opportunities to learn his business, which were evidently abundant, for the apprentice was stamped as competent by the examining board before his term was half finished. As a matter of business, what more had been contracted for?—ED. C. & D.]

## Trade Notes.

MR. J. S. WILKES, of Leicester, has succeeded to the business of Mr. Edwin Cornforth, chemist and druggist, 236 Broad Street, Birmingham.

⁂

ANOTHER "CONDY" in the field, as our advertisement pages testify. "R. Condy & Co." offer the famous Concentrated Ozone (O zo nice) at still lower prices than it has figured at yet.

⁂

MESSRS. BOURNE & TAYLOR, of Castle Street, Holborn, have just issued a new catalogue of druggists' sundries, &c., containing over 100 pages, about 40 of which consist entirely of illustrations.

⁂

MESSRS. TIDMAN & SON have recently packed their well-known sea-salt in small cardboard cases, each containing sufficient for a sponge bath, or, if we adapt their own poetical style of writing, we should say, each being sufficient to produce a single foaming billow. It will be very convenient for a lady or gentleman to be able to carry home one of these f. b.'s in their pocket, and the tradesman will get a good profit if he sells it at 2*d.*

⁂

MESSRS. SOUTHALL BROTHERS & BARCLAY have just issued the twelfth edition of their Materia Medica Specimens. The credit of the introduction of this very practical method of instruction in materia medica is due to Messrs. Southall, and in recent editions they have rendered their sets much more perfect. Lately, too, they have prepared much larger sets for the use of professors and lecturers, and these have been very highly commended by such authorities as Dr. Latham, of Cambridge; Dr. Duffey, of Dublin; and Dr. Muter, of London.

TO THE MANY convenient and saleable packets of drugs and sundries which are put up by Mr. J. C. Chubb, of Old Street, have now been added rolls of "Brown Soap Plaster for Corns, &c.," packed in little card-board boxes, and selling retail at a penny.

⁂

NITRITE OF AMYL has come largely into demand on the strength of various medical recommendations of it as a medium for the relief of the spasms of asthma, and angina pectoris, and for the prevention of sea-sickness. Messrs. Allen & Hanburys first put up the article in small glass capsules, which could be broken on the handkerchief when required, and the nitrite inhaled. Mr. Martindale has since introduced it in small glass capsules encased in silk and cotton wool, so as to serve as absorbents, and from which the inhalation can be made

⁂

THE LAVENDER CROP.—In sending us a sample of the past summer's lavender flowers, Messrs. Perks & Llewellyn (Hitchin) inform us that the flowers they have had this season have been unusually fine; indeed, they think that a large quantity might have been cut off their acres, of dimensions seldom seen. Oil of lavender, they add, is likely to be *very dear and scarce,* although the crops are better than last year, which was almost a failure. The extract prepared from the Hitchin lavender is well known for its sweetness and permanent fragrance.

⁂

CHEAP TELEPHONES AND MICROPHONES.—Messrs. M. Jackson & Co. announce that they are prepared to fix up "Hickley's Patent Telephones" in commercial establishments, with all the apparatus complete, for 10*l.* These have been already used to a considerable extent, and it appears they do not infringe any existing patent. They can be had at much lower prices than we have named suitable for less serious purposes, the lowest quotation being two guineas. We are told that these telephones have been tested up to a distance of 200 miles, and have given clear and distinct utterance. Messrs. Jackson & Co. are also supplying microphones at prices from 3*s.* 6*d.* upwards.

⁂

NEW CLINICAL THERMOMETER.—Messrs. Darton & Co., of Smithfield, the scientific instrument makers, have introduced a new clinical thermometer, which seems to be a decided improvement on those now used. The index column of mercury in the ordinary clinical thermometer is only separated from the bulb by an air space, and it not unfrequently combines with the mercury in the bulb, requiring much loss of time before another observation can be taken. In the new thermometers the separation between the bulb and the column is effected by air and by the contraction of the tube, by means of a knife-edge, to such a degree that the air can pass through the aperture but the mercury cannot.

⁂

MARTINDALE'S PORTABLE INHALER.—This offers at a very moderate price all the advantages of the more costly apparatus, and its simplicity and scientific construction give it special recommendations. It is mainly a tin vessel for the medicated liquid, and into this a sort of tin chimney with an earthenware mouthpiece is readily fitted. A thermometer passss into the liquid, and is read from the outside. The inspiration from this inhaler is particularly easy, as the air is made to pass through a number of small holes just under the surface of the liquid. A woollen cover is supplied for the apparatus, and is tied round the neck. The temperature is thereby kept up, and the inhaler is easily handled.

⁂

WENHAM'S EFFERVESCENT "LIME JUICE SALINE" is the well-chosen title of a new granular preparation, of the class which has become so widely used in domestic medicine within recent years. This will probably, in a very little while, take its place in popular favour with the best of them. It is an exceedingly well-made salt, readily soluble, and with a flavour which fully justifies its title. It is most attractively put up in glass-stoppered bottles, with a handsome outside wrapper. We have no space to record the virtues which are claimed for it. Not the most important, though perhaps the most artistically-expressed, is that it "dispels the soporific effect of alcoholic potations." The manufacturers are **Messrs. Wheeler & Co.,** of London and Southend-on-Sea.

"Sanitas" Disinfecting Powder is now sent out in shilling tins, with a perforated (or shall we say porous?) head for sprinkling.

⁂

Thevenot's Globules, which we had the pleasure of introducing to British pharmacists some four or five years since, are now supplied wholesale by the English agents for the makers, Messrs. H. K. Edge & Co., 34 King William Street. We always held and stated the opinion that the capsules manufactured by M. Thevenot were at least fully equal to others, either of French or English origin, sold at far higher prices. We know that Thevenot's have to a great extent displaced others, and an examination of some recent samples convinces us that they are now even superior to those which we first saw. They are wonderfully flexible and strong considering their thinness, and they are at the same time readily soluble. They enclose in very thin capsules either liquids or solids in the size of 5-grain pills. Small medicine chests containing a selection of useful medicines in this form are now supplied, and the globules are supplied in bottles containing two or three dozen. Any of the medicines of the British Pharmacopœia, or any other, can be put up in this form. We are informed by the agents that the globules have obtained the prize medal in the Paris Exhibition.

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## PATENTS

[The following list has been compiled expressly for The Chemist and Druggist by G. F. Redfern, Patent Agent, successor to L. de Fontainemorean & Co., 4 South Street, Finsbury, London; and at Paris and Brussels.]

Applications for Letters Patent:—

**Alkali.**—No. 3166.—H. Brunner, of Appleton, Widnes, Lancashire, manufacturing chemist. Improvements in the manufacture of alkali. Dated August 10, 1878.

**Ammonia.**—No. 3341.—J. P. Rickman, of 17 St. Bride's Street, London. Improvements in the manufacture of ammonia and in apparatus for that purpose. Dated August 24, 1878.

**Appliance for Corns.**—No. 3157.—M. Wilson, of Leadenhall Street London, merchant. An improved appliance for corns, bunions, abrasions, or protuberances. Dated August 9, 1878.

**Bisulphide of Carbon.**—No. 3386.—R. W. Papineau, of 39 Lockington Road, Battersea Park Road, London. Improvements in the mode of employing bisulphide of carbon and other volatile solvents, and in the means adopted for recovering various substances of commercial value from their solutions. Dated August 27, 1878.

**Bottle Racks, &c.**—No. 3286.—W. Holt, of Blackburn, Lancashire. An improved portable frame for supporting and packing bottles containing aërated and other liquids, the improvements being equally applicable in the construction of bottle racks. Dated August 20, 1878.

**Bottle Charger.**—No. 3307.—W. Bull, of No. 4 Lancaster Place, Strand, engineer. Improvements in mechanical appliances and apparatus for charging or filling glass and other bottles with aërated or other liquids. Dated August 22, 1878.

**Cork Extractor.**—No. 3212.—C. Price, of Wolverhampton, safe and lock manufacturer. Improvements in the means employed for drawing corks from bottles. Dated August 14, 1878.

**Curing Sand Crack.**—No. 3350.—W. A. South, R.C.V.S., of New Bond Street, London. An apparatus to be applied to the hoofs of horses and other like animals during the operation of preparing such hoofs for the cure of the disease known as "sand crack." Dated August 24, 1878.

**Disinfecting Fabrics.**—No. 3215.—J. Noad, of Richmond Works, Plaistow, Essex. Improvements in fabrics to be used for disinfecting, and also for other purposes. Dated August 14, 1878.

**Drinking Vessels.**—No. 3288.—W. Suckling and W. Empson, both of Birmingham. Improvements in and appertaining to drinking vessels and vessels for storing drinkables. Dated August 20, 1878.

**Evaporator.**—No. 3398.—J. Jowett, of Leeds, Yorkshire. Improvements in the means or apparatus employed for evaporating, such improvements being applicable for the manufacture of salt and other purposes. Dated August 28, 1878.

**Purifying Coal Gas.**—No. 3397.—H. Kenyon, of Bank Quay, Warrington, Lancashire. Improvements in purifying coal gas and in the manufacture of carbonate of ammonia, ammoniacal salts, and carbonate of soda. Dated August 28, 1878.

**Stoppers.**—No. 3312.—J. Rivers, auctioneer, of 27A Finsbury Square London. Improvements in stoppers and bottles for containing any kind of liquids, aërated water, gaseous or otherwise. Dated February 22, 1878.

**Sulphuric Acid.**—No. 3125.—W. R. Lake.—A communication from A. Liedbeck, of Stockholm, Sweden, engineer. Improved apparatus for the concentration of sulphuric acid, and for similar purposes. Dated August 7, 1878.

**Sulphate of Ammonia.**—No. 3257.—F. C. Hills, of the Chemical Works, Deptford, Kent, manufacturing chemist. Improvements in the manufacture of sulphate of ammonia, and apparatus to be used in the said manufacture. Dated August 17, 1878.

**Sulphate of Alumina.**—No. 3282.—A. A. Croll, of Coleman Street, London. Improvements in the manufacture of sulphate of alumina. Dated August 20, 1878.

**Sulphide of Zinc.**—No. 3246.—C. F. Claus, of Charlotte Street, Fitzroy Square, London, chemist. Improvements in the manufacture of sulphide and other compounds of zinc, and in the production of bye-products resulting therefrom. Dated August 16, 1878.

**Surgical Vice.**—No. 3461.—W. W. Brereton, of Oughternaid, Galway, Ireland. An improved surgical vice. Dated August 31, 1878.

**Treating Saccharine Substances.**—No. 3252.—A. P. Price.—A communication from M. Weinrich, of Vienna, Austria. Improvements in the preparation and treatment of saccharine substances and compounds. Dated August 17, 1878.

**Treating Waste Sulphuric Acid.**—R. Lavender, of Mold, Flintshire, and J. Richards, and D. Williams, both of Pontypool, Monmouthshire. Improvements in treating waste sulphuric acid that has been used for pickling iron plates, and other articles of iron or steel. Dated August 12, 1878.

**Zinc Oxide.**—No. 3237.—E. A. Parnell, of Swansea, Glamorganshire. An improved process for manufacturing zinc oxide. Dated August 16, 1878.

Letters patent have been issued for the following:—

**Bromine.**—No. 1705.—H. Simon.—A communication from Dr. A. Frank, of Charlottenburg, Germany. Improvements in the process and apparatus for developing bromine. Dated April 29, 1878.

**Bottles.**—No. 1649.—H. De Harilaoz, of the Consulate, Naples, Italy. Improvements in the manufacture of bottles and other necked vessels. Dated April 24, 1878.

**Bottles, &c.**—No. 874.—W. Wharldale, of Knottingley, Yorkshire. Improvements in bottles for aërated or gaseous liquids, and in closing or stoppering the same. Dated March 4, 1878.

**Colouring Matters.**—No. 1117.—W. L. Wise.—A communication from O. A. F. G. Przibram & Co., of Vienna, Austria. Improvements in the production of dyes or colouring matters from certain products of madder and tar. Dated March 20, 1878.

**Filters.**—No. 1011.—J. H. Johnson.—A communication from A. V. Haagen, of Philadelphia, Penn., United States. Improvements in filtering apparatus. Dated March 14, 1878.

**Filters.**—No. 901.—A. Browne.—A communication from G. Bourdon, of Paris. Improvements in filter presses. Dated March 5, 1878.

**Filters.**—No. 989.—G. Jennings, of Palace Wharf, Stangate, and G. J. Hinde, of 8 George Street, Wolverhampton. Improvements in filters for filtering and purifying water. Dated March 12, 1878.

**Filters.**—No. 907.—E. S. Gunn, of City Road, London. Improvements in filters. Dated March 6, 1878.

**Filters.**—No. 917.—G. W. von Nawrocki.—A communication from M. Ziemann, of Quedlinburg, Germany. Improvements in the production of butter and cheese, and in apparatus therefor. Dated March 6, 1878.

**Gum Oil Purifier.**—No. 886.—F. Wirth.—A communication from W. Kelbe, Doctor of Philosophy, of Carlsruhe, Germany. Improvements in the method of purifying gum (rosin oils) oils. Dated March 5, 1878.

**Invalid Bedsteads, &c.**—No. 1010.—J. Carter, of New Cavendish Street, London. Improvements in bedsteads or couches, chairs, and exercising apparatus, for the use of invalids and others. Dated March 13, 1878.

**Invalid Couches.**—No. 961.—L. Robinson, of Ilkley, Yorkshire, cabinet-maker. Improvements in invalid and other couches. Dated March 9, 1878.

**Meat Preserver.**—No. 2699.—A. Hugentobler, of 43 St. James's Road, Brixton. Improvements in the preservation of meat. Dated July 5, 1878.

**Removing and Destroying Sewer Gases.**—No. 2213.—Elizabeth J. Corbett, of San Franciso, Cal., United States, physician. Improvements in devices for removing gases from sewers and destroying them by heat. Dated June 3, 1878.

**Respirator.**—No. 806.—J. A. R. Hildebraudt.—A communication from B. Loeb, of Berlin. Improvements in the apparatus for protecting the respiratory organs in atmospheres detrimental to life.—Dated February 27, 1878.

**Revivifying Spent Lime.**—No. 1591.—G. R. Hislop, of Paisley, North Britain, gas engineer, and W. Young, of Clippens, North Britain, oil works manager. Improvements in revivifying spent lime and in the means or apparatus therefor. Dated April 20, 1878.

**Soap.**—No. 934.—J. B. Muckey and J. Sellers, manufacturing chemists, of 1 and 2 Bouverie Street, Fleet Street, London. Improvements in the manufacture of soap. Dated March 7, 1878.

**Soda and Potash.**—No. 815.—J. Mactear, of Glasgow, North Britain, chemist. Improvements in utilising bye-products of the soda and potash manufactures. Dated February 28, 1878.

**Sulphate of Alumina.**—No. 771.—E. P. Alexander.—A communication from F. Laur, of Paris, engineer. Improvements in the manufacture of sulphate of alumina. Dated February 5, 1878.

**Sulphate of Ammonia, &c.**—No. 804.—P. S. Brown, of Carrickfergus, Antrim, Ireland, manufacturing chemist. Improvements in the obtainment of sulphate of ammonia from ammoniacal liquors and in the apparatus employed therefor, the said improvements being also applicable for the attainment of cyanide and sulpho-cyanide of ammonium. Dated February 27, 1878.

**Sulphate of Ammonia.**—No. 1136.—W. L. Wise.—A communication from Dr. H. Grouven, of Leipsic, Saxony, Germany. The production of ammonia ($SO_3NH_4O$) from the nitrogen of marshy moors or meadow-land moors, and apparatus therefor. Dated March 21, 1878.

**Treating Oily Matters.**—No. 646.—E. Field, of 22 Buckingham Street, Adelphi, London, consulting engineer. Improvements in treating fatty and oily matters, and apparatus therefor. Dated February 15, 1878.

**Trimming Linseed Cake.**—No. 1144.—F. Virtue, of Hull, Yorkshire. Improvements in machinery for paring or trimming linseed or other cake. Dated March 22, 1878.

Specifications published during the month :—

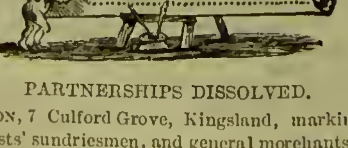
Postage 1*d*. each extra.

1877.

4662. B. M. Wilkerson. Dental chairs. 8*d*.

1878.

52. V. W. Jones. Trusses. 6*d*.
113. H. Knight. Manufacture of paints or colouring matters. 6*d*.
120. W. R. Lake. Treatment of carbonated mineral phosphates. 4*d*.
133. W. Weldon. Manufacture of soda and potash. 4*d*.
164. G. & E. Edmonds. Stoppers for bottles. 6*d*.
178. F. D. Nuttall. Internal stoppers for bottles. 2*d*.
186. R. Messel. Manufacture of sulphuric acid. 4*d*.
195. F. H. Atkins. Preparing materials for filtering water, &c. 4*d*.
202. J. C. R. & H. Robinson. Filter presses. 6*d*.
210. J. F. Smyth. Corking machines. 2*d*.
250. A. Bernstein. Apparatus for drawing off or decanting fluids. 6*d*.
256. W. Majert. Manufacture of sulphuric acid. 2*d*.
264. R. M. Etzensberger. Apparatus for making infusions or extracts. 6*d*.
304. T. T. Jones. Manufacture of nitro-glycerine. 4*d*.
317. L. Peroni. Construction of glass tubes for thermometers, &c. 6*d*.
324. B. Searles. Medical galvanic apparatus. 2*d*.
356. G. W. Von Nawrocki. Manufacture of soda and potass, &c. 4*d*.
372. F. L. H. Danchell. Refining and decolorising oils, spirits, and syrups. 4*d*.
417. F. Wirth. Apparatus for preventing cramp while holding a pen, pencil, &c. 4*d*.
456. J. Johnson. Manufacture of dextrine and glucose. 2*d*.
458. W. Taylor. Receptacles for the carriage of oil, &c. 2*d*.



## PARTNERSHIPS DISSOLVED.

ADKIN & THORNTON, 7 Culford Grove, Kingsland, marking ink manufacturers, druggists' sundriesmen, and general merchants. July 12. Debts by T. C. Thornton.

BALL & MORGAN, York, surgeons. July 31. Debts by A. Ball.

BOLT, JAMES & SAM BALME, Southall Street, Manchester, horehound beer brewers and aërated water manufacturers. August 13. Debts by Sam Balme, who continues.

BROWN & JAGGER, Huddersfield, aërated-water manufacturers and ale and porter merchants. August 24. Debts by W. W. Brown & R. Brown, jun., Brook Street, Mold Green, Huddersfield.

CARTNER & POUND, 4 Dyer's Buildings, Holborn, and 6 Kirby Street, Hatton Garden, Mx., manufacturing chemists. August 15. Debts by D. Cartner.

GODFREY & TODD, 1 Mount Place, Whitechapel, surgeons. June 28. Debts by J. B. Godfrey.

GARDNER & AINSLIE, pharmaceutical and manufacturing chemists, 58 George Street, Edinburgh. July 13, by death of James Gardner. Debts by Mr. Ainslie, who continues under the same name.

HAYS HOGG, & Co., Teams, Gateshead, chemical manure manufacturers. July 29. Debts by R. H. Holmes, 10 Royal Arcade, Newcastle-upon-Tyne, accountant.

KENYON BROTHERS & Co., Warrington, manufacturing chemists. May 24. Debts by H. Kenyon.

KITCHEN, TEMPEST & Co., Bradford, drysalters and drug merchant. Aug. 31. Debts by R. S. Tempest.

LEATHER, JOSEPH, & SONS, 35 Leeds Street and 2 Tariff Street, Liverpool, veterinary surgeons. July 11, as regards J. Leather. Debts by W. & T. Leather.

MALDEN, W., & Co., 125 Brompton Road, Middlesex, chemists and druggists. July 1.

SUGDEN BROTHERS, Woodsome Lees, near Huddersfield, manufacturing chemists. Aug. 15. Debts by H. Sugden.

WALTER & MIDDLETON, Milton-next-Gravesend, mineral water manufacturers. June 24.

## LIQUIDATIONS BY ARRANGEMENT OR COMPOSITION.

*Notices of first meetings of creditors have been issued in re the following estates. The dates are those of the "London Gazette" in which the notices first appeared.*

ALLEN, FREDERICK CHARLES, Richmond Villa, Boxley Road, and 37 Wee Street, Maidstone, dental surgeon. July 12.

BEATSON, WILLIAM, West Hill, Rotherham, also Chemical Works, Rotl ham, manufacturing chemist. July 30.

BEESLEY, THOMAS, 10 High Street, Salisbury, chemist. August 20.

BREAR, WILLIAM LOCKWOOD, 186 Lumb Lane, Bradford, optician an scientific instrument maker. August 29.

BROWN, GEORGE, & SONS, 2 Faulkner's Alley, Cow Cross Street, an 21 Columbia Road, Hackney Road, medical glass dealers and man facturers. July 17.

CARR, JAMES, Temple-view-house, Leeds, drysalter. July 12.

CARR, JOHN DEIGHTON, trading as Josiah Carr & Sons, Highfield Chemical Works, Hunslet, Leeds, chemical manufacturer. July 10.

DAY, SAMUEL, 41 Lower Union Street, Torquay, mineral water, soda water, and ginger beer manufacturer. August 7.

FODEN, THOMAS, 46 Oldham Street, Manchester, and Eccles, chemist, druggist, and dentist. July 11.

GRAVES, JOSEPH WADDINGTON, Stansted, chemist. August 28.

HARDY, JOSEPH, 27 Clowes Street, Hunslet, Leeds, soap agent. July 1

HARMER, MARTIN, trading as C. Simlick, Essex Works, Marlen Street, Stratford, chemical light manufacturer. August 16.

HILL, WILLIAM ALFRED, late William Alfred Smith, 129 & 131 Vauxha Road, and 4 Rupert Lane, Liverpool, and the Cae Coch Mine, Llanrochwyn, Carnarvon, manufacturing chemist. July 11.

HODSON, VOUROSE, Burslem, manufacturer of aërated waters. July 15.

HUTCHINSON, GEORGE, jun., & SHIPLEY, GEORGE, trading as Ge Hutchinson & Co., Ouseburn, Newcastle, oil and lard refiners and soa manufacturers. August 12.

KELLY, RICHARD ROPER, 59 Mark Lane, merchant and chemical man facturer. July 15.

MACAULAY, ÆNEAS, Middleton-in-Teesdale, medical practitioner. July 9.

MEDLAND, WILLIAM, 31 Darville Road, Stoke Newington, late 39 Kin William Street, chemical and drug agent. July 22.

MURRAY & Co., 22 St. John's Square, Clerkenwell, aneroid barometer a philosophical instrument makers, engravers, and printers. July 18.

PATTINSON, JAMES SHAW, 41 Botchergate, Carlisle, chemist. July 30.

RICHARDS, JOHN, Llandingat, Carmarthen, charcoal and chemical man facturer. August 12.

ROBB, JOHN, 53 Metal Street, Splottlands, Cardiff, chemist and druggi August 19.

ROBERTSHAW, TOM, 3 Castle Terrace, and Roweliffe Lane, Penrith, manu facturer of aërated waters. August 28.

ROBINSON, SARAH, 47 and 49 High Street, Whitchurch, druggist, groce and ironmonger. August 22.

SHERWOOD, JOHN WILLIAM, Half Moon Street, Sherborne, chemist an grocer. August 19.

SMITH, WILLIAM CROSS, 5 Northgate Street, Bath, chemist. August 2.

SNAPE, JOHN, Newton-le-Willows, druggist, baker, and provision deal August 20.

STEEL, FRANK WILLIAM, 41 Bishopsgate Street Within, and 40 Bryantw Road, Holloway, chemist. August 13.

SWINSON, GEORGE NEWTON, Turvey, surgeon. August 17.

THOMAS, JOSEPH JOSIAH, Ferndale, Ystradyfodwg, chemist. August 13.

TODD, WILLIAM HURGORD, 1 The Mount, Whitechapel Road, surge August 8.

WOLVERSON, THOMAS, Greanhill Lane, Alfreton, surgeon. August 10.

YOUNG, JOHN JAMES, 8 St. Helen's Street, Ipswich, chemist and druggi July 18.

# Educational Information.

giving particulars concerning pharmaceutical and medical education, we show first the requirements of the various bodies to which are en- ted the power of granting diplomas, and afterwards we give some iculars of the schools which especially furnish the instruction required.

## PHARMACEUTICAL DIPLOMAS.

he right to practise as a chemist and druggist in Great Britain is, by the rmacy Act of 1868, restricted to such candidates as pass (*a*) the Pre- nary Examination, and (*b*) the Minor Examination of the Pharmaceu- l Society. The Major Examination is purely honorary, and on passing ie title of Pharmaceutical Chemist is obtained. Unlike the practice in ical examining bodies, no special curriculum of study is stipulated, didates obtaining their knowledge how and where they please. Candi- s for the Minor Examination must, however, produce certificates of ng attained the age of 21 years; and also to the effect that for three s they have been registered and employed as apprentices or students, or otherwise for three years been practically engaged in the translation dispensing of prescriptions. The following are the

*ılations of the Board of Examiners for the Examination and Registration of Pharmaceutical Chemists, Chemists and Druggists, and Apprentices or Students.*

ccordance with the Pharmacy Acts, 15 & 16 Vict. cap. 56; 31 & 32 Vict. cap. 121; and 32 & 33 Vict. cap. 117.

### THE FIRST OR PRELIMINARY EXAMINATION.*

(For Registration as "Apprentices" or "Students.")

his Examination is held throughout Great Britain on the first Mondays anuary, April, July, and October in every year. Candidates for this nination must give not less than *fourteen* clear days' notice.

he examination is a written one, and comprises—

ıtin.—Translation into English of a paragraph from the first book of ar ("De Bello Gallico").

ıtin Grammar.

nglish Grammar, Composition.

he first four rules of Arithmetic, Simple and Compound, Vulgar Frac- s and Decimals, and a thorough knowledge of the British and Metrical ems of Weights and Measures.

the case of candidates residing in the country and unable to attend in lon or Edinburgh, the Registrar shall send the questions, under seal, to person appointed to superintend the writing of the answers, with uctions that they be opened by him in the presence of the candidates, shall write the answers forthwith in his presence in a given time. questions are prepared and reported upon by the College of Preceptors.

ıe Board of Examiners in London meets for conducting the Minor and or Examinations in February, April, June, July, October, and December. lidates must give notice to the Registrar of their intention to present ıselves, and pay the fee, on or before the first day of the month in which examinations are held. A registrar's certificate of birth must be pro- d by each candidate at the time of giving notice. Secretary and Regis- Elias Bremridge, 17 Bloomsbury Square, London, W.C.

e Board of Examiners in Edinburgh meets for the Major, Minor, and ified Examinations as often as required. *Fourteen* days' notice is ssary. A registrar's certificate of birth must be produced by each can- te at the time of giving notice. The dates of meetings are announced e *Pharmaceutical Journal*. Secretary to the Board in Edinburgh, John kay, 119 George Street, Edinburgh.

### MINOR EXAMINATION.

Registration under the Pharmacy Act, 1868, as "Chemists and Druggists.")

ndidates for this examination must have passed the First or Preliminary mination.

he following form the subjects of examination:—

*escriptions.*—The candidate is required to read without abbreviation graph prescriptions; translate them into English; and render a literal ell as an appropriate translation of the directions for use. To detect rs, discover unusual doses, and have a general knowledge of Posology; to render in good Latin ordinary prescriptions written in English.

*actical Dispensing.*—To weigh, measure, and compound medicines; e the directions in concise language in a *neat and distinct* hand: to ı and properly direct each package.

*armacy.*—To recognise the preparations of the Pharmacopœia which not of a definite chemical nature, and have well-marked physical acters, such as extracts, tinctures, powders, &c.; to give the propor- of the active ingredients and possess a *practical* knowledge of the ses, and the principles of the processes, by which they are made, and e best excipients and methods of manipulation for forming emulsions, &c.

*teria Medica.*—To recognise specimens of roots, barks, leaves, fruits, s, gums, animal substances, &c., used in medicine; give the botanical zoological names of the plants, &c., yielding them, and the natural lies to which they belong; name the countries and sources from which are obtained, the officinal preparations into which they enter, and e the quality and freedom from adulteration or otherwise of the mens.

*Botany.*—To recognise the more important indigenous plants used in medicine. To possess a general knowledge of the elementary structure of plants, and the structure and distinctive characters of roots, stems, leaves, and their parts. To name and describe the various parts of the flower.

*Chemistry.*—To recognise the ordinary chemicals used in medicine. To possess a *practical* knowledge of the processes by which they are produced, the composition of such as are compound, and explain the decompositions that occur in their production and admixture, by equations or diagrams. To determine practically, by means of tests, the presence in solution of the chemicals in common use, and explain the reactions which occur in each case. To possess a general knowledge of the laws of chemical philosophy, and a *practical* knowledge of the means of determining specific gravities, densities, and temperature, and of the instruments appertaining thereto, and the physical and chemical constitution of the atmosphere.

### MAJOR EXAMINATION.

(For Registration as "Pharmaceutical Chemists" under the Pharmacy Act, 1852.)

Candidates for this examination must have passed the Minor Examination at least three months previously.

*Materia Medica.*—This comprises a *practical* knowledge of the methods of estimating the value of important drugs, of obtaining their active proximate constituents in a separate state; of identifying them and ascertaining their purity or impurity by tests.

*Botany.*—This comprises an intimate acquaintance with the parts of the flower, fruit, and seed; the functions and mode of arrangement of the different organs of plants; a knowledge of the general principles of classification, and of the Linnæan and De Candolle's systems. The candidate must be able to distinguish practically between each of the following natural orders:—Ranunculaceæ, Papaveraceæ, Cruciferæ, Malvaceæ, Leguminosæ, Rosaceæ, Cucurbitaceæ, Umbelliferæ, Compositæ, Gentianaceæ, Convolvulaceæ, Solanaceæ, Atropaceæ, Labiatæ, Scrophulariaceæ, Polygonaceæ, Euphorbiaceæ, Orchidaceæ, Iridaceæ, Liliaceæ, Melanthaceæ, Gramiuaceæ; and refer to their respective orders such specimens as may be shown to him.

*Chemistry.*—This comprehends an intimate knowledge of the laws of chemical philosophy, a *practical* knowledge of the nature and properties of the elements and their compounds, both organic and inorganic, especially those used in medicine or the arts. The different combinations and decompositions must be explained by equations; also the *qualitative* analysis of the more important chemicals, *e.g.*, Nitrates, Chlorides, Carbonates, Sulphates, Phosphates, Oxalates, Tartrates, &c., and the detection of impurities in them, and the *volumetric* estimation of the strength of all Pharmacopœia preparations in which standard solutions are ordered to be used.

An elementary knowledge of the properties of light, heat, electricity, and magnetism is also required.

If a candidate fail to pass either of the examinations, the fee will be returned, less one guinea, but he will be admitted to a subsequent examination, after an interval of three months, on giving the usual notice and payment of the full fee.

### *Examination or Registration Fees and Subscriptions to the Society.*

| FEES. | £ | *s.* | *d.* | ANNUAL SUBSCRIPTIONS on becoming connected with the Society. | £ | *s.* | *d.* |
|---|---|---|---|---|---|---|---|
| First or Preliminary (Registered as Apprentices or Students) .. .. .. | 2 | 2 | 0 | Eligible, on application to the Council, to be elected Apprentices or Students of the Society .. .. .. .. .. | 0 | 10 | 6 |
| Minor (Registered as Chemists and Druggists) | 3 | 3 | 0 | Eligible, on application to the Council, to be elected Associates of the Society .. .. | 0 | 10 | 6 |
| Major (Registered as Pharmaceutical Chemists) .. | 5 | 5 | 0 | Eligible, on application to the Council, to be elected Members of the Society .. .. | 1 | 1 | 0 |
| | | | | Or a Life Member's Commutation Fee of Twenty Guineas. | | | |

Chemists and Druggists in business before August 1, 1868, and registered as such, on being elected Members of the Society, pay an Entrance Fee of .. .. .. .. £2 2 0
And Subscription for the current year .. .. .. 1 1 0
£3 3 0

### COUNCIL EXAMINATION PRIZES.

Pharmaceutical chemists who were associates of the Society at the time of passing the Major Examination will be entitled to compete for the following prizes at the end of the session, in the month of July, in which they passed the Major Examination.

First Prize.—Pereira Medal in silver, and a present of books value 5*l.*, or thereabouts, given by Mr. T. H. Hills.

Second Prize.—The Pharmaceutical Society's Medal in silver, and a present of books value 3*l.*, or thereabouts, given by Mr. T. H. Hills.

Third Prize.—The Pharmaceutical Society's Medal in bronze, and a present of books value 2*l.*, or thereabouts, given by Mr. T. H. Hills.

*Subjects of Examination.*—Materia Medica, Botany, and Chemistry.

## PHARMACEUTICAL SOCIETY OF IRELAND.

At present only one qualification—that of Pharmaceutical Chemist—is recognised by the Council. Women are admitted to examination under the same limitations as men. Licentiates of the Apothecaries' Hall, of Ireland, may be registered as pharmaceutical chemists without examination on payment of three guineas. The members' subscription is one guinea per annum, or a life composition of ten guineas.

The following are the regulations for candidates for the qualification of Pharmaceutical Chemist:—

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ertificates of having passed the Local Examinations of the Universities xford, Cambridge, or Durham, the Examination of the College of Pre- rs, or those of any legally constituted Examining Body previously oved by the Council, *provided Latin and Arithmetic be included in the cts*, are accepted in lieu of this examination.

### PRELIMINARY EXAMINATION.

*Latin.*—To translate into English, and parse, one or more sentences from a Latin author:—Cæsar's "Commentaries," First Book; or Virgil's "Æneid," First Book.

*English.*—To write on a subject selected by the examiner, and to write from dictation.

*Arithmetic.*—The first four rules, simple proportion, and decimals. To describe the weights and measures of the Pharmacopœia, and of the metric system.

*The Rudiments of Chemistry and Botany.*—(See Roscoe's "Chemistry"—Science Primers, and Brown's "Botany"—Elementary Science Manuals.)

Candidates presenting themselves for this examination must not be under sixteen years of age.

The fee for this examination will be 2*l.* 2*s.*

In case of rejection, 10*s.* 6*d.* to be retained for examination fees.

A rejected candidate may present himself for examination after a lapse of three months.

Preliminary examinations are held on the first Monday of January, April, July, and October.

### PHARMACEUTICAL EXAMINATION.

Candidates presenting themselves for this examination must be twenty-one years of age, and have passed the Preliminary examination at least one year previously.

Candidates must also have been practically engaged in compounding and dispensing for at least two years, under the instruction of a pharmaceutical chemist or apothecary.

Examinations are held on the first Wednesday of January, April, July, and October.

*Botany.*—To recognise the principal indigenous plants used in medicine, to refer them to their natural orders, and to give the definitions and the distinctive characters of their several parts.

*Materia Medica.*—To recognise specimens of the drugs of the Pharmacopœia, to describe their characters and active principles, name the sources from which they are obtained, and the officinal preparations into which they enter; and to detect adulterations.

*General and Pharmaceutical Chemistry.*—The elementary laws of chemistry and physics, including chemical equations. To recognise the chemical substances of the Pharmacopœia, to describe the processes by which they are obtained; qualitative analysis, including the tests of the Pharmacopœia and volumetric analysis; and to submit to a practical examination in these subjects when required.

*Practical Pharmacy.*—To translate Latin prescriptions; to detect dangerous doses; to compound and dispense correctly.

To explain the processes of making the non-chemical preparations of the Pharmacopœia, and to recognise them.

Candidates are to give notice to the Council, seven clear days before the stated meetings for examination, of their desire to be examined; and also to lodge a receipt of having paid the fee of five guineas into the Bank of Ireland to the credit of the Society.

In case of rejection, the sum of 2*l.* 2*s.* will be retained to meet the expenses of examination.

A rejected candidate may present himself for re-examination after a lapse of six months.

FORM OF NOTICE.—"*I,*____________________, *desire to be examined for the license to act as a Pharmaceutical Chemist.*

Mr. H. J. Fennell, College of Physicians, Kildare Street, Dublin, will give any additional information required.

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## THE SCHOOL OF PHARMACY OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

### PROFESSORS.

| | |
|---|---|
| CHEMISTRY AND PHARMACY .. .. | Professor REDWOOD, F.C.S. |
| BOTANY AND MATERIA MEDICA .. | Professor BENTLEY, F.L.S. |
| PRACTICAL CHEMISTRY.. .. .. | Professor ATTFIELD, F.C.S. |

The thirty-seventh Session, 1878-79, will commence on October 1, 1878, and terminate on July 31, 1879.

At 8 P.M. on October 2 the School prizes will be distributed, and an address to the students delivered by Mr. Octavius Corder.

Application for admission to the school, for prospectuses, or for further information, may be made to the professors or their assistants in the Lecture Room or Laboratories, 17 Bloomsbury Square, London, W.C.

### CHEMISTRY AND PHARMACY.

| | £ | s. | d. |
|---|---|---|---|
| One Course .. .. .. .. .. .. .. | 3 | 3 | 0 |
| An entire Session (two Courses) .. .. .. .. | 4 | 4 | 0 |
| Perpetual admission .. .. .. .. .. .. | 5 | 5 | 0 |

### BOTANY AND MATERIA MEDICA.

| | £ | s. | d. |
|---|---|---|---|
| Botany and Materia Medica, one Course (five months) .. | 2 | 2 | 0 |
| An entire Session (two Courses), including Systematic and Practical Botany .. .. .. .. .. .. | 3 | 3 | 0 |
| Systematic and Practical Botany, separately .. .. | 1 | 1 | 0 |
| Perpetual Admission to all the Courses .. .. .. | 4 | 4 | 0 |

A student entering for the first course on Botany and Materia Medica is also entitled to attend the lectures on Systematic and Practical Botany on payment of two guineas and a half at the time of entering this first course in October.

### PRACTICAL CHEMISTRY.

| | |
|---|---|
| Professor of Practical Chemistry .. | DR. JOHN ATTFIELD, F.C.S. |
| Demonstrator .. .. .. .. | DR. ALFRED SENIER, F.C.S. |
| Assistant-Demonstrator .. .. | MR. HENRY ALLEN. |

### FEES.

| Hours of Study | One Month | Two Months | Three Months | Five Months | Ten Mont |
|---|---|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 10.0 to 5.0 daily (Sat. 10.0 to 2.0) | 4 4 0 | 7 7 0 | 10 10 0 | 15 15 0 | 26 5 0 |
| 10.0 to 5.0 on any 3 days weekly .. | 2 17 6 | 4 17 6 | 6 16 6 | 10 10 0 | 17 17 0 |
| 10.0 to 5.0 on any 2 days weekly .. | 2 2 0 | 3 10 0 | 4 17 6 | 7 7 0 | 12 12 0 |
| Any 3 hours daily | 2 17 6 | 4 17 6 | 6 16 6 | 10 10 0 | 17 17 0 |
| Any 2 hours daily | 2 2 0 | 3 10 0 | 4 17 6 | 7 7 0 | 12 12 0 |

## THE SOUTH LONDON SCHOOL OF PHARMACY,

325 *Kennington Road, S.E.*

Director—Dr. JOHN MUTER, M.A.
Secretary—Mr. WM. BAXTER.

The session commences on September 15, and lasts till July 20, and the following courses of lectures, etc., are delivered several times during the session:—Latin: A course of sixty lessons. Botany: A course of sixty lectures. During the summer months a lecture is delivered once a week, at Mitcham, on Mr. Bridger's herb farm. Materia Medica: A course of sixty lectures. Pharmacy: This course lasts three months, and includes—A description of the processes used in pharmaceutical laboratories, and practical instruction in dispensing and elegant pharmacy. Theoretical Chemistry: A course of sixty lectures. Practical Chemistry: I. Junior Course (three months):—This includes—1. The manufacture of the chief chemicals of the B.P., in which the processes are typical; 2. Qualitative analysis, and separation of bases and acids; 3. The practical taking of specific gravities, temperatures, and the measurement of gases. II. Senior Course (six months):—This extends to—1. Detection of poisons in organic mixtures. 2. Quantitative analysis of B.P. substances, gravimetric and volumetric; 3. Analysis of manures, water, minerals, etc.; 4. Microscopic and chemical examination of food and drugs, for detecting adulterations; 5. Elementary organic analysis.

*Fees.*—1. For the whole course of lectures (including admission to the museum), 8*l.* 8*s.* (This fee entitles laboratory students to attend from the date of entry to the end of the entire session. For example, a student entering the school in September can continue to attend the lectures if he chooses until the end of the session in July, and return as often as he pleases any number of sessions without extra expense, provided he also attends the laboratory.) 2. For the laboratory—Junior Course, three months, 6*l.* 6*s.*; Senior Course, first month, 4*l.* 4*s.*; each succeeding month, 3*l.* 3*s.* Students who attend the lectures must also take laboratory tickets, as the course cannot be divided in any way.

The institution offers silver and bronze medals, for which all the students can compete. Over 1,500 persons from this school have passed the Pharmaceutical Examinations. Instruction in Microscopy and General and Food Analysis is given to medical officers of health and others.

## WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY.

62, *Lambeth Road, London, S.E.*

Proprietors—Messrs. WILLS & WOOTTON.

The session extends from September 1 till July 20.

Two classes of students are received, and 400 lectures are delivered on the following subjects:—Latin, Dispensing, Pharmacy, Botany, Materia Medica, Chemistry, Physics.

*Fees.*—Preliminary course, one month, 2*l.* 2*s.*, or until qualified, 5*l.* 5*s.*; Minor course, one month, 3*l.* 3*s.*, three months, 7*l.* 7*s.*, inclusive fee until qualified, 10*l.* 10*s.* (For this fee a student can attend until qualified as a Pharmaceutical Chemist, provided he commences his study for the Major within three months from the date of passing the Minor.) Major course, one month, 2*l.* 2*s.*, until qualified, 5*l.* 5*s.*; a fraction of a month being charged at the same ratio. Fee to old students according to arrangement. Accommodation is provided for resident pupils. Terms, 1*l.* 1*s.* per week.

Medals and certificates are awarded at examinations held in February, June, and December in each year.

Evening Classes are held for gentlemen engaged during the day, and unable to leave business.

Major: Monday, Practical Chemistry, 7 till 9. Class 9 till 10. Minor and Modified: Tuesday, Wednesday, and Thursday, Practical Chemistry, 7 till 8.30. Lectures, 8.30 till 10. Preliminary: Friday, 7 till 9.

*Terms for Evening Classes*—Major, one month, 8*s.*; three months, 1*l.* 1*s.*; until qualified, 5*l.* 5*s.* Minor, one month, 6*s.*; three months, 15*s.*; for the entire course (ten months), 1*l.* 10*s.* Preliminary, one month, 4*s.*; three months, 10*s.* 6*d.*; until qualified, 3*l.* 3*s.*

⁂ Gentlemen desirous of a personal interview should call at the office of the school, 62 Lambeth Road.

Cheques to be crossed "London and Westminster Bank." Post-office Orders may also be crossed and payable at the chief office, London.

130 students from this school presented themselves for examination last session, and 109 passed. The course of instruction is thoroughly practical.

## CENTRAL SCHOOL OF CHEMISTRY AND PHARMACY.

. school for the education of pharmaceutical students has been ıblished under the above title at 173 Marylebone Road. Chemistry and ʼsics are taught by Mr. A. P. Luff, F.C.S., Pereira Medallist; Pharcy, Botany, and Materia Medica by Mr. J. Woodland, F.C.S., M.P.S. ː session commences on October 1, and lectures are given both in the time and in the evening. A fitted laboratory is provided. Lodging board is provided at 1*l.* 1*s.* a week for those who require it.

### FEES—PAYABLE IN ADVANCE.

ıne month, 4*l.* 4*s.*; two months, 7*l.* 7*s.*; three months, 9*l.* 9*s.*; the entire ion, 15*l.* 15*s.* Students wishing to attend the classes on Chemistry and ʼsics only can do so by payment of 1*l.* 1*s.* per month.

tudents wishing to enter their names, and for further particulars, should ıly to Messrs. Luff & Woodland, 173 Marylebone Road, N.W.

## ΗE WEST CENTRAL SCHOOL OF CHEMISTRY AND PHARMACY,

43 *Great Coram Street, Russell Square, W.C.*

Principal—Mr. Henry Judd.

The Evening Classes for Pharmaceutical Students are the oldest-estashed in the kingdom, having reached their eleventh half-yearly session. ey are held throughout the week, from 7.30 to 10 p.m., viz., Monday, eliminary; Tuesday, Wednesday, Thursday, and Friday, Minor. A eliminary Class is held at 3.30 on Wednesdays, conducted alternately by ː Principal and C. P. Marriott, M.A.

*Fees* (payable in advance, or by instalments).—Preliminary, for the full ʼm of three months, 2*l.* 2*s.* (proportionably less between terms). Minor, clusive until successful, 10*l.* 10*s.*; one night weekly, for three months ım entrance, 2*l.* 2*s.*; two nights weekly, ditto, 3*l.* 3*s.*; three nights weekly, ;to, 3*l.* 13*s.* 6*d.*; Private Tuition for any Examination, per hour, 3*s.* 6*d.* ıjor—Students are only received for private tuition.

## 'HE MANCHESTER SCHOOL OF PHARMACY.

(*In connection with the Manchester Chemists' Association.*)

The following Courses of Lectures will be delivered by Mr. Louis Siebold, C.S., at 225 Oxford Street, commencing early in October:—Thirty-five tures on Chemistry, on Friday evenings, from 7.30 to 9 o'clock, fee, 35*s.* ıirty lectures on Materia Medica and Pharmacy, on Tuesday evenings, from 0 to 8.45, fee, 30*s.* Twenty lectures on Analytical Chemistry, on Tuesday enings, from 8.45 to 9.45, fee, 20*s.* Composition Fee, admitting the student all three courses, 3*l.* 10*s.* Students attending these courses must be sociates of the Manchester Chemists' Association. The subscription ı. 6*d.*) may be paid with the fees. Tickets and further information may obtained of Mr. Siebold, or of Mr. F. Baden Benger, Hon. Sec., 7 Exchange reet. [N.B.—A course of lectures on Botany, by Mr. Leo H. Grindon, ll be commenced early after Christmas.]

## EDINBURGH SCHOOL OF PHARMACY AND CHEMISTRY.

*Marshall Street, Nicolson Square.*

### LECTURERS.

| | |
|---|---|
| Materia Medica and Pharmacy .. | R. Urquhart. |
| Chemistry .. .. .. .. | T. W. Drinkwater, F.C.S. |
| Botany .. .. .. .. .. | D. M'Alpine. |

There are two separate courses of instruction, each distinct from the her. The first consists of Lectures and Practical Instruction during the y, for those gentlemen who wish to devote their whole time for the purse of study; the second consisting of Lectures and Practical Instruction fixed hours in the evening, for those gentlemen who are unable to attend e day courses.

*The Fees* for the Evening Classes for the Session of Three Months are ıe Guinea for each course; the hours of instruction being from 7 to 10 ery evening except Saturday. The Day Classes are held between the urs of 10 and 4.

For further information apply to the Secretary of the School.

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### THE POSTAL SYSTEM.

By this system Pharmaceutical students in the country are supplied at gular intervals with printed lectures which they are expected to copy out, ıster thoroughly, and return. The series of lectures is supposed to cover the ground of a full pharmaceutical education, and the young man who ıdies them with intelligence will probably find himself well prepared either r the examinations or for further study. Messrs. Wills & Wootton, of Lambeth Road, and Mr. Tully, of Tunbridge Wells, supply the lectures. ırther particulars will be found in our advertisement sheets.

### TULLY'S POSTAL SYSTEM.

Mr. John Tully, of 52 Camden Road, Tunbridge Wells, "Hill's Prizeıu," established his postal system in 1872. It is divided into three classes. o. 1 is for the Preliminary, including all the subjects of the syllabus. If e student fail on first presenting himself, he is instructed for the next amination free of charge, providing he passes it within six months. No. 2 for the Minor Examination for students under 20 years of age. It is tended to give direction to the studies, and to prevent the formation of an attentive habit of reading. It includes monthly examination papers to answered, and lectures which cover all the ground for the Minor and ıjor. Students must be between 16 and 20 years of age; they can comence at any time, but must continue for not less than six months. The is a guinea a year, payable half-yearly in advance. No 3 is for the ınor for students over 20, and includes a full series of lectures. Fee, one ıinea, payable in advance. A special course is organised for the Modified d Apothecaries' Hall Examinations.

### THE MEDICAL PROFESSION.

Beyond a decided liking for study and ordinary perseverance and principles a boy must have a real wish to be a surgeon or a doctor, or he is not likely to be a successful man. When he shows himself equally ready to adopt any occupation his father may select, the medical profession is, perhaps, the last that should be chosen.

Before the embryo physician can be well established in life, ten years must pass, and, perhaps, not less than a thousand pounds expended. This sum will include all board expenses as well as fees, and it is sometimes in the power of the student to gain a considerable portion of it by scholarships and appointments. Many of the metropolitan medical schools are richly endowed in this respect, but the competition for these rewards is necessarily so great that only lads with unusual abilities and perseverance have a chance of obtaining them. St. Bartholomew's Hospital is one of the richest. At this school three scholarships are awarded to entering students, who may compete for not more than two of them. Their value is 130*l.*, 50*l.*, and 50*l.* respectively, for one year only. At the end of the first year and of the 2nd or 3rd, and 3rd or 4th respectively, 50*l.* more may be gained. And the best student in medicine or surgery who has completed his 3rd, 4th, or 5th year, obtains the interest of 2,000*l.*, making a possible total of 380*l.* Besides this, appointments as house-surgeon and some similar positions, which at this hospital include residence and a salary of 25*l.* a year, are periodically made. These appointments are so valuable from the experience they afford that the successful candidates are in most large schools obliged to pay 10 or 20 guineas on obtaining them. We must again warn all concerned that only extraordinary abilities and perseverance will obtain these prizes.

The first step in the life of a medical man is to pass the "Preliminary Examination" in general subjects. This is intended to make sure that he has sufficient education to sustain worthily the character of a gentleman. It must include English language (including Grammar and Composition), Arithmetic (including Vulgar and Decimal Fractions), Algebra (including Simple Equations), Geometry (first two books of Euclid), Latin (including Translation and Grammar); and one of the following optional subjects; Greek, French, German, Natural Philosophy (including Mechanics, Hydrostatics, and Pneumatics).

All the licensing bodies hold such examinations. But in most cases they will accept certificates from several other sources besides their own. The Oxford University requires all candidates for her medical degrees to take previously that of B.A. Oxon. From one point of view it matters little which of the Preliminary Examinations the student undertakes; but on the other hand the Matriculation Examination of the London University is the most valuable. It is the hardest, but it franks all others, with the exception of Oxford, and is the only one accepted for the University medical degrees, which are the highest qualifications obtainable in the profession. It also exempts from any further Preliminary in case the student should proceed to the Fellowship of the College of Surgeons. If he does not pass the London Matriculation Examination, but still wishes to take a degree, he must pass the Preliminary of the College whose degree he desires. If he only wants the usual minor qualifications in medicine or surgery, it does not matter which examination he undertakes, as the certificate of either franks the rest. Those most generally resorted to are the examinations of the London College of Surgeons, the United Colleges of Physicians and Surgeons of Edinburgh, the Apothecaries' Society, the Glasgow Faculty of Physicians and Surgeons, and the Registration Examination for Medical Students of the University of Dublin.

As soon as the Preliminary Examination is passed the student must register himself as a medical student at the office of the General Medical Council, 315 Oxford Street, W.

Forty-eight months after this he will be admitted to his Final Examination if he have attained the age of 21. Passing this entitles him to practice as a duly qualified practitioner of medicine, and to be registered as such.

The act of registration enables him to recover his fees in a court of law, to hold public appointments, and to sign legal certificates, but registered or not he may practice as he likes.

During the four years of his student life he must have studied during four winter sessions, or three winter and two summer sessions, at a recognised medical school. He must also have passed a Professional Examination, which should comply with the following regulations laid down by the General Medical Council.

"The Professional Examination for a license shall be divided into two parts; the first embracing the primary or fundamental branches directly connected with the practice of medicine or surgery. The former shall not be undergone till after the close of the winter session of the second year of professional study; and the latter, or final examination, not until after the close of the prescribed period of professional study.

"The examination in Physics, Botany, and Natural History may be undergone at an earlier period than the first Professional Examination.

"The Professional Examinations shall be conducted both in writing and orally, and they shall be practical in all branches in which they admit of being so.

"Excellence in one or more subjects shall not be allowed to compensate for failure in others; and that if a candidate be rejected for failure in any one subject he shall be re-examined in all."

These stipulations *at least* have to be observed by all the examining bodies, and all students are supposed to be registered.

Unless they are complied with the General Medical Council can withhold the right of registration.

There are nineteen corporate bodies in the United Kingdom which are empowered to hold the Professional Examination, and whose certificates qualify the holders for registration. These are detailed below, with a summary of their requirements, the diplomas they grant, and the fees they demand. The qualifications are so numerous, and can be obtained by such various conditions, that it saves much time and expense if the intending student of medicine at the outset of his studies decides which of them he intends to seek. In other words, he should make up his mind before which of the examining bodies he will present himself. Degrees such as M.B. (Bachelor of Medicine), M.D. (Doctor of Medicine), M.C. or M.S. (Master of Surgery) are granted only by Universities. If he desire one of these he must enter his name on the books of one of the ten Universities which grant them, and in most cases must reside there at least three years before he commences his four years' medical study. But the time and expenditure required is different for each degree. No one who has not obtained one is entitled to be called doctor. The chief advantage of the degree is the sound knowledge required to obtain it, and the increased respect of those who are qualified to appreciate its value. Nine corporate bodies, besides the Universities, grant diplomas which are recognised by the General Medical Council. If the student only desires registration, without a degree, he will find that the regulations by which the necessary diplomas can be obtained also vary in important particulars. The fees for the examinations on which the diplomas are granted range from six to thirteen guineas; the curriculum required is longer in some than in others. Some allow it to be completed in any recognised school; others require that the whole shall be undergone at their own.

It is not advisable for the student to limit his attainments to simple qualification for registration. It is true that this will allow him to practise all branches of his profession, but to obtain public appointments of any value a "double" qualification is needed. A "double" qualification means a diploma for surgery as well as one for medicine, which necessitates in most cases a double examination and a double fee. In a few cases arrangements have been made by which the double qualification may be obtained at a single examination with a fee only slightly increased. An examination is held by the Royal College of Surgeons, Edinburgh, at which representatives of the Royal College of Physicians are present, and on passing this examination the student is granted a double diploma, which may be registered under the Medical Act.

During the past year several of the metropolitan medical schools have raised their fees from 100 to 130 guineas.

The examining bodies are the following :—

**The University of Oxford,** which grants the degrees of **M.B.** and **M.D.** The medical student must pass the requisite examinations for the degree of B.A., and afterwards spend two years in study prior to the first or scientific examination for the degree of Bachelor of Medicine, and two years more prior to the final or practical examination for the same degree. Evidence must be brought to show that he has studied the practical parts of his profession in a first-class hospital. A dissertation has to be publicly read three years after the M.B., for the degree of M.D.

**The University of Cambridge,** besides **M.B.** and **M.D.,** grants the degree of **M.C.** (Master in Surgery). For M.B. five years of medical study are required, except in the case of medical students who have graduated with honours as Bachelors of Arts, four years being then sufficient. There are three examinations. The *first* in Mechanics and Hydrostatics, Chemistry (with Heat and Electricity), and Botany. The *second*, n Anatomy and Physiology (Human and Comparative), and Pharmacology. The *third* (at the conclusion of medical study), in Pathology and the Practice of Physic, Clinical Medicine, and Medical Jurisprudence. The examinations are partly in writing and partly oral, in the hospital, and take place twice annually.

Previously to the first examination, lectures must have been attended on Chemistry (with manipulations) and Botany. Previously to the second examination, the student must have attended lectures on Anatomy and Physiology (Human and Comparative), Materia Medica, Pharmacy, and Pathology; have dissected one season; and attended hospital practice one year. Previously to the third examination, lectures must have been attended on the Principles and Practice of Physic, Clinical Medicine, Medical Jurisprudence, and Midwifery; also Hospital Practice for three years.

The degree of M.D. may be taken three years after M.B. The regulations are similar to those at Oxford.

For the degree of M.C., the candidate must have passed the three examinations for M.B., and have attended lectures on Human Anatomy (a second course), on the Principles and Practice of Surgery, Clinical Surgery, Midwifery (with ten cases); also a second season of Dissections, three years' surgical practice at a recognised hospital, and a house-surgency or dressership for six months. He is then required to pass an examination in Surgical Anatomy, Pathology, the Principles and Practice of Surgery, and Clinical Surgery.

**The University of London** is only an examining body, and does not undertake any teaching work. It stipulates for the **M.B.** degree: (1) The Matriculation Examination; or a degree of Arts is accepted from the Universities of either Sydney, Melbourne, or Calcutta. (2) The Preliminary Scientific Examination and two examinations in medicine. The student must also have been engaged in professional studies at least four years subsequent to matriculation. The degree of **M.D.** may be competed for four years, or, in some cases, five years after the M.B. degree has been taken. It includes Logic and Moral Philosophy and Medicine, with practical examination in Clinical Medicine. The University of London also grants the degrees of **B.S.** and **M.S.** (Bachelor and Master in Surgery). These comprehend the M.B.

**The University of Durham** grants licenses in medicine and surgery four years after matriculation (one of which must have been spent at the University of Durham College of Medicine), **M.B.** or **M.S.** can be obtained three years later, and **M.D.** one year later still, provided that the requisite courses are fulfilled and examinations passed. The degrees in surgery do not necessarily require that all the examinations for M.B. shall be passed.

*Note.*—Practitioners of fifteen years' standing are now admitted, under certain conditions, to the degree of M.D. without previous residence.

**The University of Edinburgh** confers the degrees of **M.B., C.M.,** and **M.D.** The first must be passed before either of the others are granted. For the M.B. and C.M. degrees a course of four years, and 1,150 lectures, at least, of medical and surgical study is required, and each candidate is examined both in writing and *vivâ voce*—1st, on Chemistry, Botany, and Natural History; 2nd, on Anatomy, Institutes of Medicine, Materia Medica (including Practical Pharmacy), and Pathology; 3rd, on Surgery, Practice of Medicine, Midwifery, and Medical Jurisprudence; 4th, clinically on Medicine and on Surgery in a hospital. For the M.D. degree two years of medical and surgical practice must elapse, the candidate must be a graduate in Arts, and must submit a thesis composed by himself on any branch of knowledge comprised in the professional examinations for the M.B. degree.

**The University of Glasgow** grants the same degrees, and provides curricula and examinations similar to those of the University of Edinburgh.

The same may be said of the **University of Aberdeen.**

Also of the **University of St. Andrew's**; except that by the latter the degree of Doctor in Medicine may be conferred on any registered medical practitioner above the age of forty years whose professional position and experience are such as, in the estimation of the University, to entitle him to that degree, and who shall, on examination, satisfy the medical examiners of the sufficiency of his professional knowledge; provided always that degrees shall not be conferred, under this section, to a greater number than ten in any one year.

**The University of Dublin (Trinity College)** grants the degrees of **M.B., M.D.,** and **M.Ch.,** and also licenses in medicine (**L.M.**) and surgery (**L.S.**). To take the degree of M.B., it is required that the candidate shall also take that of B.A., and shall have attended hospital and lectures for four years. The M.D. degree is granted to an M.B. of three years' standing, who must perform exercises before the Regius Professor of Physic. The degree of M.Ch. demands a curriculum somewhat different from, though of the same length of time as, that required for the M.B. examination. A licentiate in medicine or surgery must pass the medical course and examinations required for M.B. or M.Ch. respectively, but the fees are somewhat lower. He can, however, afterwards take up his degree.

**The Queen's University of Ireland** comprises the Queen's Colleges of Belfast, Cork, and Galway, each of which possesses a Faculty of Medicine. The degrees of **M.D.** and **M.Ch.** are granted by this University. The curriculum for either extends over four years, and comprehends the usual subjects.

Besides the foregoing Universities, the following Corporations grant licenses to practise :—

**The Royal College of Physicians, London.** There are Licentiates, Members, and Fellows of the Royal College of Physicians, London. The licentiates have passed a Preliminary Examination in Arts, and two other professional examinations, besides giving evidence of at least four years of professional education as a registered medical student. The fee is fifteen guineas. The course of study previous to the examination for membership is almost similar to that prescribed for the licentiates. Members may also be admitted, after a certain examination, who have taken the degree of M.B. at other universities. The fee is thirty guineas. The members of the College are eligible for Fellowship.

**The Royal College of Surgeons of England.** To become a member the following course is prescribed. Preliminary Examination:—Students can pass this at the College. Fee 2*l*. Certain certificates, as, for instance, that of the Middle Class Examinations (Senior), are accepted in lieu of this examination, provided such include Latin and Mathematics. The professional education must comprise four years of study subsequent to the Preliminary Examination, and include certain attendances at lectures and hospital practice. The fee is 22*l*. For Fellowship the curriculum is longer, the examinations more severe, and the fees higher. Or a member of eight years' standing may offer himself for the final examination for the Fellowship. The Royal College of Surgeons also grants certificates of qualification in midwifery and in dental surgery.

**The Royal College of Physicians, Edinburgh,** grants licenses in medicine. The fee here is ten guineas. The curriculum is very similar to that which has been described. Any licentiate of a College of Physicians or graduate of a British or Irish University, with whose knowledge of medical and general science the College may be satisfied, may be admitted a member of the College, provided he shall have attained the age of twenty-four years. The fee to be paid by a member is 31*l*. 10*s*. When a licentiate is raised to the rank of member he pays 21*l*. When a member is raised to the rank of fellow the fee is 31*l*. 10*s*., exclusive of stamp-duty, which amounts to 25*l*.

**The Royal College of Surgeons, Edinburgh,** also grants diplomas of membership. The fee here for the professional examinations amounts to 10*l*.

**The Royal College of Physicians of Edinburgh** and the **Royal College of Surgeons of Edinburgh,** while they still continue to give their diplomas separately, under separate regulations, have made arrangements by which, after one series of examinations, the student may obtain the diplomas of both colleges. The general principle of this joint examination is that it shall be conducted by a board in which each body is represented in those branches which are common to both medicine and surgery, but that the College of Physicians shall take exclusive charge of the examination in medicine, and the College of Surgeons of the examination in surgery. The object of the joint examination is to give to students facilities for obtaining from two separate bodies, and at less expense, a qualification in medicine and a qualification in surgery. Students passing that examination successfully will be enabled to register two qualifications under the Medical Act—Licentiate of the Royal College of Physicians of Edinburgh and Licentiate of the Royal College of Surgeons of Edinburgh.

**The Faculty of Physicians and Surgeons of Glasgow** also grant a diploma. The candidates follow a curriculum similar to that of the Edinburgh College of Surgeons. The fee for the Preliminary Examination is 10*s*., and for the Professional Examinations 10*l*. In connection with the Royal College of Physicians of Edinburgh a double diploma is also granted. The fee for this, as for the similar double diploma in Edinburgh (Professional Examinations only), is 16*l*.

**The King and Queen's College of Physicians in Ireland** grants a license in medicine, and also a license in midwifery. A four-years' course of medical study is required, and a special additional examination for the midwifery qualification. The fee for the license in medicine is 15 guineas; for the midwifery diploma, 3 guineas; or, if both are taken out together, 16*l*.

**The Royal College of Surgeons in Ireland** grants *Letters Testimonial* and Fellowship. For the former a Preliminary Examination and the usual medical course is required, the total of the fees being 26*l*. 15*s*. For Fellowship the B.A. or an equivalent examination is demanded as preliminary, and a longer course of study. The fee is 47*l*. 5*s*. if the candidate intends to practise within ten miles of Dublin, or 36*l*. 15*s*. otherwise.

**The Society of Apothecaries, London,** grants a certificate of qualification to practise as an Apothecary, and requires that the candidate shall produce testimonials of having passed a Preliminary Examination in Arts, as a test of general education. Of having served an apprenticeship or pupilage of not less than five years to a practitioner qualified by the Act of

This period may include the time spent in attending lectures and tal practice. Of having attained the full age of twenty-one years. Of moral conduct. And of having pursued a course of medical study in ormity with the regulations of the Court. The course of study includes winter sessions and two summer sessions. The extent of the examins is modified towards gentlemen holding the diplomas of other ining bodies. The Society also grants a certificate of qualification to s an assistant, the examination comprising the following subjects :—In slating physicians' prescriptions; in the British Pharmacopœia; in rmacy, Pharmaceutical Chemistry, and Materia Medica. *Fees.*—For a ficate of qualification to practise, six guineas, the half to be paid at the examination; for an assistant's certificate, two guineas.

**he Apothecaries' Hall of Ireland.** *Professional Education and mination.* Every candidate for the license to practise must produce ificates to the following effect :—1. Of having passed an examination rts (*i.e.* a Preliminary Examination) previously to entering on proonal study. 2. Of being registered as a Student in Medicine. 3. Of g at least 21 years of age, and of good moral character. 4. Of apprenship to a qualified apothecary, or of having been engaged in Practical rmacy with an apothecary for three years subsequently to having ed the examination in Arts. 5. Of having spent four years in proional study. 6. Of having attended the following courses—viz., Chemistry, ing one winter session; Anatomy and Physiology, during two winter ions; Demonstrations and Dissections, during two winter sessions; any and Natural History, during one summer session; Practical Phary and Practical Chemistry (in a recognised laboratory), each during ee months; Principles and Practice of Medicine and Therapeutics, ing one winter session; Midwifery and Diseases of Women and Children, ing six months; Practical Midwifery at a recognised hospital (attence upon twenty cases); Surgery, during one winter session; Medical risprudence, during one summer session; Instruction in the Practice of ccination. 7. Of having attended at a recognised hospital or hospitals Practice of Medicine and Clinical Lectures on Medicine, during two nter and two summer sessions; also the Practice of Surgery and Clini- Lectures on Surgery during one winter and one summer session. The aminations are divided into two parts, the first part comprehending emistry, Botany, Anatomy, Physiology, and Pharmacy; the second dicine, Therapeutics, Surgery, Pathology, Midwifery, Forensic Medicine, d Hygiene. Candidates for the certificate of Assistant to an Apothecary Ireland, in compounding and dispensing medicine, are examined in the itish Pharmacopœia and in Pharmacy, scientific and practical, including history, characters, and qualities of medicines, with their preparations d doses, and in the translation of Latin prescriptions. Neither the Arts tificate nor the certificate of Apprentice is required for the examination Assistant.

## MEDICAL OFFICER OF HEALTH.

the various public appointments open to medical men alone, the most portant is that of Medical Officer of Health. The only legally required alification is the usual double qualification for the practice of medicine. t in view of the large demand for specially qualified persons several of the amining bodies have provided examinations in matters relating to State edicine or Public Health, and grant certificates of proficiency in that bject. These are the London, Cambridge, Durham, Edinburgh, and asgow Universities, and the Royal College of Physicians, Edinburgh.

The syllabus of the examination is almost the same in each case, and shall only quote that of the London University. The fees, certificates, d other qualifications required before examination differ slightly. They e as follows :—

**The London University** grants certificates of proficiency in Public ealth, and a 5*l.* gold medal to a candidate who evinces sufficient merit. he examination is held annually on the second Monday in December. ndidates must have held the degree of M.B. (London) for at least one ar. Two months' notice is required by the registrar. The fee is 5*l.*

**The University of Cambridge** grants a certificate of competency r the duties of a Medical Officer of Health on the results of a double amination in "State Medicine." Candidates must be on the Medical egister and 24 years of age. Fee for entire examination, eight guineas. rofessor Liveing, Cambridge, will supply further information.

**The University of Durham** provides at the Medical College (Newastle-upon-Tyne) Education in State Medicine, and grants two classes of rtificates of proficiency in Sanitary Science: (*a*) candidates must be gistered medical practitioners, must attend lectures on Public Health for e winter session at the College, must pass an examination and pay a fee f five guineas; (*b*) the candidate must be a medical practitioner registered efore January 1, 1878, must have acted as Medical Officer of Health for ve years, must pass the examination under class (*a*), must write an essay n some practical sanitary question, and must pay a fee of ten guineas.

**The University of Edinburgh** grants degrees of "Bachelor and octor of Science in the Department of Public Health." Candidates must old a degree in medicine in some British or foreign university recognised y the University Court. They must undergo at least two courses of nstruction at the University in professional or scientific studies bearing on he subjects of examination. Candidates may enter for the two examinaions for B.Sc. Dep. Pub. Health at an interval of five months. They must ave attended a course of instruction in Public Health, and have had at east three months' recognised instruction in Analytical Chemistry. The xaminations are held in October and April.

Bachelors of Science in Dep. Pub. Health may proceed to the degree of octor in the same department after the lapse of one year. They must produce evidence that they have been engaged in Practical Sanitation uring one year, and must before January 31 deposit an original or critical hesis on some matter connected with their occupation. Fees for B.Sc. Pub. Iealth beyond those for M.B.Ed., 10*l.* 10*s.*; for D.Sc., 5*l.* 5*s.* more.

**The University of Glasgow** grants certificates of qualification in Public Health. The examination is held on the second Tuesday in April, n two divisions. All candidates must be registered medical practitioners, nd must have attended recognised courses in Public Health and Analytical Chemistry. Fee eight guineas, payable one month before examination. Further information may be obtained from Professor Simpson, University of Glasgow.

**The Royal College of Physicians of Edinburgh** grants a similar certificate. Candidates must be registered medical practitioners. Examinations held in April and October. Whole charge for certificate, ten guineas, payable in instalments of three, three, and four guineas, the first one week before examination.

**At University College, London,** there is a special class in Hygiene and Public Health, the fee for the entire course being fourteen guineas, plus materials required in the practical course.

**Lectures on Public Health** are delivered at most of the medical schools.

**The Examination at the London University** includes the following subjects :—Chemistry and Microscopy, in their relation to air, water, and food; Meteorology and Geology (as far as they bear on the duties of Health Officers, viz., general knowledge of meteorological conditions, reading and correction of instruments, general knowledge of soils, their conformation and chemical composition; Vital Statistics in reference to the methods employed in determining the health of a community, birth rate, death rate, disease rate, duration and expectancy of life, present amount of mortality and its causes in different communities; Hygiene—general principles of hygiene; Special Topics—soil, construction of dwellings, conservancy of cities, unhealthy trades, supply of food to cities and examination of food, disposal of sewage, water supply; Medicine, in reference to the origin, spread, and method of prevention of diseases generally, but especially of those of the epidemic class; Sanitary Engineering (as far as regards the arrangement connected with water supply, sewerage, and ventilation), a knowledge of the reading of plans, sections, scales, &c.; Sanitary Law (as far as it relates to the duties of Officer of Health), a knowledge of the powers given under the various Sanitary Acts, as defined in the instructions issued by the Local Government Board, and of the methods of procedure in special cases. This syllabus covers that of all the other five examining bodies. In each case the examination is written, oral and practical, and includes the analysis of one or more samples of air, water, and adulterated food or drugs.

## ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

This great hospital was founded in 1123. Within the grounds are contained the Church of St. Bartholomew the Less; a college for the residence of medical pupils; the hospital, with 710 beds, laboratories, libraries, museums, theatres, and pleasure grounds. More than 163,000 patients were relieved during 1877. The school premises are on the point of being rebuilt. When the alterations are completed the accommodation will be more than doubled. The aggregate fee for complete medical education is 132 guineas, in instalments of 40, 46, and 46 guineas; or 125 guineas in advance. The numerous valuable scholarships open to the pupils have been newly amended, and in some cases increased.

### LECTURERS.

| | |
|---|---|
| Medicine | Dr. Black, Dr. Andrew, Dr. Gee<br>Dr. Southey, Dr. Church |
| Surgery | Mr. Holden, Mr. Savory, F.R.S.<br>Mr. Callender, F.R.S.<br>Mr. Thomas Smith |
| Descriptive and Surgical Anatomy | Mr. Thomas Smith, Mr. Langton |
| General Anatomy and Physiology | Mr. Morrant Baker |
| Histology | Dr. Klein, F.R.S. |
| Chemistry | Dr. Russell, F.R.S.<br>Dr. Armstrong, F.R.S. |
| Materia Medica and Diseases of the Larynx | Dr. Brunton, F.R.S. |
| Forensic Medicine and Hygiene | Dr. Southey |
| Midwifery and the Diseases of Women and Children | Dr. Matthews Duncan |
| Botany | Rev. George Henslow |
| Pathological Anatomy | Dr. Gee |
| Comparative Anatomy | Dr. Moore |
| Ophthalmic Medicine and Surgery | Mr. Power |
| Dental Anatomy and Surgery | Mr. Coleman |
| Mental Diseases | Dr. Claye Shaw |
| Morbid Anatomy | Dr. Wickham Legg |
| Diseases of the Skin | Mr. Morrant Baker |
| Orthopædic Surgery | Mr. Willett |
| Diseases of the Ear | Mr. Langton |
| Diseases of the Eye | Mr. Vernon |
| Practical Surgery | Mr. Marsh |
| Practical Anatomy and Operative Surgery | Mr. Cumberbatch, Mr. Walsham |
| Mechanical and Natural Philosophy | Mr. C. R. Smith |
| Practical Physiology | Dr. V. D. Harris |

Medical Tutor—Dr. Moore.

## CHARING CROSS HOSPITAL SCHOOL OF MEDICINE.

The hospital contains 150 beds. About 1,200 in-patients and 17,000 out-patients are treated annually. The aggregate fee for matriculated students, that is for students who remain here for their whole educational course, is 81*l.* 6*s.* in instalments; for others, 84*l.* 2*s.* in advance. Composition Fee for Dental Surgery, 42*l.* 2*s.*

Introductory Lecture October 1, at 4 P.M., by J. Pearson Irvine, B.A., B.Sc., M.D.

### LECTURERS.

| | |
|---|---|
| Anatomy and Operative Surgery | Edward Bellamy, F.R.C.S. |
| Bandaging | J. Astley Bloxam, F.R.C.S. |
| Botany | J. C. Saunders, M.A. |
| Chemistry and Practical Chemistry | C. W. Heaton, F.C.S. [F.C.S.<br>Demonstrator, Mr. A. H. Hooker, |
| Clinical Medicine | Alexander Silver, M.A., M.D. |
| Clinical Surgery | H. Hancock, F.R.C.S. |
| Comparative Anatomy | J. F. Blake, M.A. |
| Demonstrations and Dissections | J. Cantlie, M.A., M.B., F.R.C.S.,<br>Hayward R. Whitehead, M.R.C.S. |

| | |
|---|---|
| Dental Surgery | John Fairbank, M.R.C.S. |
| Diseases of Children | W. B. Houghton, M.D. |
| Forensic Medicine | J. Pearson Irvine, B.A., B.Sc., M.D. |
| Materia Medica and Therapeutics | J. Mitchell Bruce, M.A., M.D., F.R.C.P. |
| Mental Diseases | J. Forbes Winslow, D.C.L., M.D. |
| Morbid Histology | J. Cantlie, M.A., M.B., F.R.C.S. |
| Pathology and Morbid Anatomy | T. Henry Green, M.D., F.R.C.P. |
| Physiology, Theoretical and Practical | Alexander Silver, M.A., M.D.<br>Daniel Colquhoun, M.R.C.S. |
| Principles and Practice of Medicine | A. J. Pollock, M.D., F.R.C.P. |
| Principles and Practice of Midwifery and Diseases of Women | J. Watt Black, M.A., M.D. |
| Principles and Practice of Surgery | R. Barwell, F.R.C.S. |
| Public Health | C. W. Heaton, F.C.S.<br>J. Pearson Irvine, B.A., B.Sc., M.D.<br>W. Eassie, C.E. |
| Skin Diseases | A. Sangster, M.B. |
| Surgical Pathology | Ed. Amphlett, F.R.C.S., M.A., M.B. |

Francis Hird, F.R.C.S., Dean.
J. Pearson Irvine, B.Sc., B.A., M.D., Sub-Dean.

## KING'S COLLEGE MEDICAL SCHOOL.

The hospital, situated in Portugal Street, Lincoln's Inn, W.C., contains 170 beds in use. During the past year 1,690 in-patients, and 31,942 out-patients were relieved, besides 618 midwifery cases attended in their own homes. Professor Beatley, F.L.S., is the Dean of the Faculty, and will supply any further information.

The Introductory Lecture will be delivered on October 1, at 4 P.M., by Professor A. H. Garrod, M.A., F.R.S.

Aggregate fee, 125*l*. in advance.

PROFESSORS AND DEMONSTRATORS.

| | |
|---|---|
| Anatomy, Descriptive and Surgical | John Curnow, M.D. |
| Physiology | Gerald F. Yeo, M.D. |
| Chemistry | C. L. Bloxam, F.C.S., W. N. Hartley, F.C.S., and J. M. Thomson, F.C.S. |
| Clinical Medicine | George Johnson, M.D., F.R.S. |
| Medicine, Principles and Practice of | L. S. Beale, M.D., F.R.S. |
| Clinical Surgery | John Wood, F.R.S., and Joseph Lister, F.R.S. |
| Surgery, Principles and Practice of | H. Smith, F.R.C.S. |
| Botany | Robert Beatley, F.L.S. |
| Materia Medica and Therapeutics | E. B. Baxter, M.D. |
| Obstetric Medicine | W. Playfair, M.D. |
| Forensic Medicine | D. Ferrier, M.D., F.R.S. |
| Comparative Anatomy | A. H. Garrod, M.A., F.R.S. |
| Pathological Anatomy | Alfred B. Duffin, M.D. |
| Dental Surgery | S. Hamilton Cartwright, M.R.C.S. |
| Ophthalmology | J. Soelberg Wells, M.D., F.R.C.S. |
| Psychological Medicine | Edgar Sheppard, M.D. |

## THE LONDON HOSPITAL AND MEDICAL COLLEGE, MILE END, E.

This hospital, established in 1740, is now the largest in London, the recent addition of the Grocers' Company's Wing having raised the number of beds to 800. It was also the first in Great Britain to establish a complete medical school. The ninety-fourth session of the school will be commenced on October 1 by a conversazione at 8 P.M.

Perpetual fees for lectures and hospital practice, payable in advance, 90 guineas.

LECTURERS.

| | |
|---|---|
| Medicine | Dr. Sutton and Dr. Fenwick |
| Surgery and Diseases of the Eye | John Couper, F.R.C.S. Eng. |
| Anatomy | Walter Rivington, M.S. Lond. |
| Practical Anatomy | H. S. Wilson, M.A. Cantab., M.D. |
| Chemistry and Medical Jurisprudence | Dr. C. Meymott Tidy |
| Physiology, and General Anatomy | J. McCarthy, M.B. Lond., &c. |
| Comparative Anatomy | E. B. Aveling, D.Sc. |
| Anatomy and Pathology of the Teeth | A. W. Barrett, M.B. Lond., &c. |
| Midwifery and Diseases of Women | James Palfrey, M.D. |
| Aural Surgery | J. Gardiner Brown, F.R.C.S. Ed. |
| Toxicology | J. E. D. Rodgers, M.R.C.S. Eng. |
| Materia Medica and General Therapeutics | M. Prosser James, M.D. |
| Botany | John Gilbert Baker, F.R.S. |
| Practical Surgery | C. F. Maunder, F.R.C.S. Eng. |
| Pathology | Dr. Sutton and Dr. S. Mackenzie. |
| Diseases of the Throat | Morell Mackenzie, M.D. Lond. |

Secretary—R. Kershaw, M.R.C.S. Eng.

## THE MIDDLESEX HOSPITAL MEDICAL COLLEGE.

The hospital is situated in Berners Street, Oxford Street, W. It contains 305 beds, 33 of which are reserved for cancer patients. Last year 2,250 in-patients were admitted, 22,382 out-patients were relieved, and 417 maternity cases attended. Aggregate fee for perpetual attendance on hospital practice and lectures, 90*l*., paid in advance; for dental students, 40 guineas. The Dean, Mr. A. Clark, will supply further information.

Introductory Address October 1, at 3 P.M., by Dr. Arthur W. Edis.

LECTURERS.

| | |
|---|---|
| Medicine | Dr. Cayley, Dr. Greenhow, F.R.S.<br>Dr. Thompson |
| Psychological Medicine | Mr. Henry Case |
| Surgery (General, Clinical, and Practical) | Mr. Hulke, F.R.S., Mr. Nunn<br>Mr. Geo. Lawson<br>Mr. Morris, M.B., and Mr. A. Clarke |
| Physiology, Histology and General Anatomy | Mr. B. Thompson Lowne |
| Pathological Anatomy | Dr. Coupland |
| Descriptive and Surgical Anatomy | Mr. Morris, M.A., M.B. |
| Chemistry | Mr. W. Foster, B.A. Cantab. |
| Midwifery and Diseases of Women and Children | Dr. J. Hall Davis, Dr. A. W. Edis |
| Diseases of the Eye | Mr. Critchett |
| Dissecting Room | Mr. Hensman, Mr. W. R. Williams |
| Materia Medica and Therapeutics | Dr. Thorowgood |
| Medical Jurisprudence | Dr. R. King, M.A. Cantab. |
| Botany, Zoology, and Comparative Anatomy | Mr. Hensman |
| Public Health | Dr. R. King |
| Diseases of the Larynx and Ear | Mr. A. Clark |
| Dermatology | Dr. R. Liveriag, M.A. |

## ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, HYDE PARK CORNER, S.W.

The hospital contains 353 beds—205 for surgical and 148 for medical cases. Perpetual fee, 130*l*.

Introductory Lecture, October 1, at 4 P.M., by Dr. Whipham.

LECTURERS.

| | |
|---|---|
| Medicine | Drs. Dickinson, Whipham, and Barclay |
| Surgery | Messrs. Pollock, Pick, Rouse, Lee, Holmes, Haward, and Stirling |
| Pathology | Dr. Whipham |
| Anatomy | Drs. Cavafy, Ewart, and Mr. Pick |
| Ophthalmic Surgery | Mr. Brudenell Carter |
| Chemistry | Dr. Ralfe and Mr. Wanklyn |
| Histology | Mr. Stirling |
| Midwifery and Diseases of Women and Children | Dr. Barnes |
| Medical Jurisprudence and Diseases of the Skin | Dr. Wadham |
| Psychological Medicine | Dr. Blandford |
| Dental Surgery | Mr. A. Winterbottom |
| Aural Surgery | Mr. Dalby |
| Diseases of the Throat | Dr. Whipham |
| Comparative Anatomy | Dr. Brailey |
| Materia Medica | Dr. Watney |
| Botany | Dr. Owen |

## ST. MARY'S HOSPITAL MEDICAL SCHOOL, CAMBRIDGE PLACE, PADDINGTON, W.

Composition fee, 125 guineas, payable in advance.

Introductory Address, October 1, at 3 P.M., by Dr. Farquharson.

LECTURERS.

| | |
|---|---|
| Medicine | Dr. H. Jones, F.R.S., Dr. Sieveking, Dr. Broadbent, and Dr. Chambers |
| Surgery | Mr. H. Walton, Mr. J. R. Lane, Mr. Norton, and Mr. H. W. Page |
| Physiology | Mr. Page |
| Histology | Dr. Shepherd |
| Anatomy | Mr. E. Owen |
| Dissections | Mr. J. G. Garbutt (Demonstrator)<br>Mr. W. Pearce (Assistant Demonstrator) |
| Pathology and Diseases of the Skin | Dr. Cheadle |
| Chemistry and Natural Philosophy | Dr. C. R. A. Wright, F.C.S.<br>Mr. A. P. Luff, F.C.S. (Demonstrator) |
| Dental Surgery | Mr. Howard Hayward |
| Midwifery | Dr. Meadows<br>Dr. Wiltshire |
| Materia Medica | Dr. Farquharson |
| Botany | Rev. J. M. Crombie |
| Medical Jurisprudence | Dr. Randall |
| Ophthalmic Surgery | Mr. Haynes Walton |
| Aural Surgery | Mr. G. Field |
| Comparative Anatomy | Mr. St. George Mivart, F.R.S. |

## ST. THOMAS'S HOSPITAL.

St. Thomas's, one of the four Royal Hospitals, was founded A.D. 1207 by the Canons of the Priory of St. Mary Overie, Southwark.

The new erection, which was opened by the Queen in 1871, contains 572 beds, in six isolated blocks. Each patient has, at least, 1,800 cubic feet of air allotted to him. In the year ending December 31, 1877, 3,419 patients were admitted to the hospital, 20,166 out-patients were treated, 1,733 women were attended during their confinement at their own homes, and casualties attended 55,683 times.

The Medical School is a comparatively modern growth, as it had no real existence before the year 1768.

The Introductory Address for the session 1878-79 will be delivered on October 1, at 4 P.M., by Mr. Nettleship.

Aggregate fee, 100*l*.

LECTURERS AND DEMONSTRATORS.

| | |
|---|---|
| Medicine | Dr. Bristow, Dr. Ord, Dr. Murchison, and Dr. Stone |
| Surgery | Mr. S. Jones, Mr. MacCormac, Mr. Croft, and Mr. Mason |
| General Pathology and Diseases of the Skin | Dr. Payne |
| Descriptive Anatomy | Mr. Mason<br>Mr. W. W. Wagstaffe |
| General Anatomy and Physiology | Dr. John Harley |
| Ophthalmic Surgery | Mr. Nettleship |
| Chemistry and Practical Chemistry | Dr. Bernays |

| | |
|---|---|
| lwifery and the Diseases of Women and Children | Dr. Gervis |
| ysics and Natural Philosophy<br>teria Medica and Therapeutics | Dr. Stone |
| rensic Medicine | Dr. Payne, Dr. Cory |
| rbid Anatomy, Practical Pathology nd Diseases of the Throat | Dr. Greenfield |
| tany | Mr. A. W. Bennett |
| nparative Anatomy | Mr. C. Stewart |
| ntal Diseases | Dr. H. Rayner |
| te Medicine | Dr. A. Carpenter |
| ctical Physiology | Dr. T. C. Charles |
| ctical and Manipulative Surgery | Mr. Croft and Mr. MacKellar |
| eases of the Ear | Mr. Clutton |
| eases of the Teeth | Mr. J. W. Elliott<br>Mr. W. G. Ranger |
| tra Demonstrations in Anatomy | Dr. Reid and Assistants |
| croscopical Anatomy | Mr. Rainey |

## NIVERSITY COLLEGE HOSPITAL, LONDON.

The college, situate in Gower Street, W.C., prepares students specially for examinations of the University of London. Aggregate fee for medical struction, 130 guineas payable in three instalments.

The Introductory Lecture will be given by Prof. Lankester, October 1, 8 P.M.

LECTURERS.

| | |
|---|---|
| nciples and Practice of Medicine | Prof. Sydney Ringer, M.D. |
| ysiology | Prof. J. Burdon Sanderson, M.D., F.R.S., Prof. Edward A. Schäfer |
| emistry | Prof. Williamson, Ph.D., F.R.S. |
| atomy | Prof. Thane |
| mparative Anatomy and Zoology | Prof. Lankester, M.A., F.R.S. |
| inciples and Practice of Surgery | Prof. Marshall, F.R.S. |
| actical Surgery | Prof. Berkeley Hill, M.B., F.R.C.S.<br>Mr. Marcus Beck, M.S., M.D., F.R.C.S.<br>A. E. Barker, F.R.C.S. Ireland |
| ntal Surgery | G. A. Ibbetson, F.R.C.S. |
| tany | Prof. Oliver, F.R.S., F.L.S. |
| idwifery and Diseases of Women | Prof. Graily Hewitt, M.D. |
| thological Anatomy | Prof. H.C. Bastian, M.A., M.D., F.R.S. |
| edical Jurisprudence | Prof. Maudsley, M.D. |
| ateria Medica and Therapeutics | Prof. F. T. Roberts, M.D., B.Sc. |
| hthalmic Medicine | Prof. Wharton Jones, F.R.S. |
| ate Medicine | Prof. Corfield, M.A., M.D. |
| inical Medicine | Sir Wm. Jenner<br>Dr. H. C. Bastian<br>Dr. Wilson Fox<br>Dr. Sidney Ringer |
| inical Surgery | Prof. Marshall<br>Prof. Berkeley Hill<br>Prof. C. Heath |

## VESTMINSTER HOSPITAL MEDICAL SCHOOL.

This hospital was founded by voluntary subscriptions in 1719, and was the st so established. It was incorporated by Act of Parliament in 1836, and now being enlarged to contain 200 beds. Last year, with smaller resources, it received 1,817 in-patients and 19,968 out-patients, a total of ,785. The dean of the school is Dr. Allchin, who will supply further information.

Introductory Address, October 1, at 3 P.M., by Dr. W. C. Grigg.

Aggregate Fee, 92*l.* 10*s.*; for dental students, 45*l.*

LECTURERS.

| | |
|---|---|
| edicine | Dr. Fincham, Dr. Sturges, and Dr. Allchin |
| rgery | Mr. Cowell, Mr. Davy, and Mr. Macnamara |
| natomy | Mr. A. P. Gould and Mr. Miller |
| hysiology | Dr. Allchin |
| ractical Physiology and Histology | Mr. W. Murrell |
| athology and Morbid Anatomy | Dr. Allchin |
| hemistry and Practical Chemistry, Toxicology and Metallurgy | Dr. Dupré, F.R.S. |
| id wifery and Diseases of Women | Dr. Potter |
| ateria Medica and Therapeutics | Dr. Phillips |
| otany | Mr. H. W. S. Worsley Benson, F.L.S. |
| sychological Medicine | Dr. Sutherland |
| phthalmic Surgery | Mr. Cowell |
| ural Surgery | Mr. Keene |
| ental Surgery | Mr. Walker |
| omparative Anatomy | Mr. Carter Blake |
| atural Philosophy | Mr. Brooke, F.R.S. |

## QUEEN'S COLLEGE, BIRMINGHAM.

### FACULTY OF MEDICINE.

Hospital instruction is given in the General and Queen's Hospitals, which ogether contain 390 beds. More than 4,500 in-patients and 45,000 outatients are treated annually. Composition college fee, payable in two nstalments, 5 guineas; for hospital practice for four years, in two instalnents, 30 guineas. Further information may be obtained from the everend the Warden.

LECTURERS.

| | |
|---|---|
| Medicine | Dr. Balthazar Foster |
| Surgery | Mr. O. Pemberton and Mr. F. Jordan |
| Anatomy | W. Thomas, M.B. Lond.<br>Dr. Jolly |
| Physiology | Dr. Norris and Mr. T. H. Bartlett |
| Pathology | Mr. E. Rickards |
| Chemistry and Practical Chemistry | A. C. Bruce, M.A., F.C.S. |
| Practical Anatomy | Mr. Bennett May and Mr. H. Eales, F.R.C.S. |
| Midwifery | Dr. J. Bassett and Mr. J. Clay |
| Diseases of Women and Children | Dr. R. C. R. Jordan and Mr. S. Berry |
| Forensic Medicine and Toxicology | J. St. S. Wilders, M.R.C.S.<br>A. C. Bruce, M.A., F.C.S. |
| Materia Medica and Therapeutics | Dr. J. Sawyer |
| Operative Surgery | O. Pemberton, F.R.C.S. Edin.<br>F. Jordan, F.R.C.S. |
| Ophthalmic Surgery | J. Vose Solomon, F.R.C.S. |
| Dental Surgery | T. Howkins, M.R.C.S. |
| Botany | Dr. Hinds |

## THE BRISTOL MEDICAL SCHOOL.

This is now conducted as a department of the newly-constituted University College, Bristol. Buildings are being erected for the college in Tyndall's Park, but until their completion the Medical School will occupy its former premises in Old Park. In connection with the school are the Bristol Royal Infirmary (founded in 1735), with 250 beds, and the Bristol General Hospital (founded in 1832), containing 154 beds. The next winter session commences October 1, 1878. Composition fee for all classes at the Medical School, 60 guineas. Hospital practice extra.

LECTURERS.

| | |
|---|---|
| Medicine and Pathological Anatomy | Dr. Spencer, Dr. Skerritt |
| Surgery | Mr. R. W. Coe, Mr. R. W. Tibbits |
| Anatomy | Mr. N. C. Dobson, Dr. Waldo, Mr. W. E. Cant |
| Physiology | Mr. G. F. Atchley, Dr. R. S. Smith |
| Chemistry | T. Coomber, F.C.S. |
| Midwifery and Diseases of Women and Children | J. G. Swayne, M.D. |
| Medical Jurisprudence | W. P. Keall, L.R.C.P., &c. |
| Materia Medica and Therapeutics | G. F. Burder, M.D., &c. |
| Botany | A. Leipner |
| Comparative Anatomy | G. F. Atchley, M.B., &c. |

## UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

Inaugural address delivered on October 1, after 2 P.M., by Samuel McBean, Esq., M R.C.S.

Hospital practice can be attended at the Newcastle Infirmary.

Aggregate fee for lectures, 50 guineas; for Hospital practice, 17 guineas. The average annual expenses at the College, including dinner and meat luncheons, and unfurnished lodgings, are about 80*l.* to 85*l.*

LECTURERS.

| | |
|---|---|
| Anatomy | J. Runel and W. P. Mears, MM.R.C.S. |
| Physiology | Dr. Drummond |
| Medicine | Dr. G. H. Philipson, M.A. |
| Surgery | Dr. G. Y. Heath, Dr. W. C. Arnison, and Dr. Luke Armstrong |
| Chemistry | A. Freire-Marreco, M.A. |
| Pathology | B. Bramwell, M.B.. and Dr. C. J. Gibb |
| Public Health | H. E. Armstrong, M.R.C.S. |
| Diseases of Women and Children | Dr. C. Gibson |
| Midwifery | Dr. T. C. Nesham |
| Medical Jurisprudence | Dr. F. Page |
| Botany | Dr. J. Murphy, B.A. |
| Therapeutics | T. W. Barron, B.A., M.B. |
| Materia Medica | S. McBean, M.R.C.S. |

## THE LEEDS SCHOOL OF MEDICINE

Was founded in 1830. It is in connection with the Royal Infirmary, which has accommodation for 300 patients. The average annual number of outpatients is 13,000. Composition fee for school lectures, 48 guineas; perpetual fee, hospital practice, and clinical lectures, 26*l.* 5*s.* Extras about 3 guineas.

Introductory Address, by J. E. Eddison, M.D. October 2, at 3.30 P.M.

LECTURERS.

| | |
|---|---|
| Anatomy | Dr. R. T. Land, J. A. Nunneley, M.B., E. Robinson, M.R.C.S., A. F. McGill, F.R.C.S., A. W. M. Robson, M.R.C.S. |
| Physiology | Chas. J. Wright, M.R.C.S.<br>John Horsfall, M.A., F.R.C.S.<br>James Walker, M.R.C.S., L.R.C.P. |
| Chemistry (at the Yorkshire College of Science) | Dr. T. E. Thorpe |
| Botany, Comparative Anatomy, and Zoology | Professor L. C. Miall |
| Materia Medica | Thomas Churton, M.D. |
| Pathology | A. F. McGill, F.R.C.S. |
| Medicine | Dr. J. D. Heaton<br>Dr. T. C. Allbutt<br>Dr. J. E. Eddison |
| Surgery | T. R. Jessop, F.R.C.S.<br>Edward Atkinson, M.R.C.S., F.L.S.<br>C. G. Wheelhouse, F.R.C.S.<br>T. P. Teale, M.A., F.R.C.S. |
| Midwifery | W. N. Price, M.R.C.S.<br>James Braithwaite, M.D., M.R.C.S. |
| Forensic Medicine | Thomas Scattergood, M.R.C.S. |
| Mental Diseases | Herbert C. Major, M.D. |

## THE LIVERPOOL ROYAL INFIRMARY SCHOOL OF MEDICINE.

The building has recently been much enlarged and improved. During the last year an aggregate of 7,600 patients were relieved at the infirmary. The composition fee for attendance on all lectures and demonstrations, payable in two instalments, is 50 guineas; the perpetual hospital fee is 32 guineas; there are extras amounting to about 7 guineas.

Introductory Address, by George Shearer, M.D., F.L.S., at 3 P.M.

LECTURERS.

| | |
|---|---|
| Medicine | A. T. H. Waters, M.D. |
| Surgery | Rushton Parker, F.R.C.S. |
| Physiology | Richard Caton, M.D.<br>Henry Ashby, M.B. |
| Anatomy | W. Mitchell Banks, F.R.C.S. |
| Pathology | A. Davidson, M.A., M.D. |
| Ophthalmology | T. Shadford Walker, M.R.C.S. |
| Chemistry | J. C. Brown, D.Sc. Lond. |
| Obstetric Medicine | A. B. Steele, L.K.Q.C.P. |
| Diseases of Children | R. Gee, M.D. |
| Materia Medica | W. Carter, LL.B., M.B. |
| Medical Jurisprudence | Ewing Whittle, M.D. |
| Botany | George Shearer, M.D., F.L.S. |
| Comparative Anatomy | E. H. Dickenson, M.A., M.D. |
| Dental Surgery and Mechanics | J. Snape, L.D.S., R.C.S.<br>R. E. Stewart, L.D.S., R.C.S. |

## OWENS COLLEGE, MANCHESTER.

The next session commences on October 1.

LECTURERS.

| | |
|---|---|
| Physiology and Histology | Prof. Arthur Gamgee, M.D., F.R.S. |
| Anatomy | Dr. M. Watson, Mr. W. C. Williamson, F.R.S. |
| Chemistry | Dr. H. E. Roscoe, Mr. C. Schorlemmer, F.R.S. |
| Medicine | Dr. Roberts, Dr. Morgan |
| Surgery | Mr. E. Lund, Mr. S. M. Bradley |
| General Pathology and Morbid Anatomy | Dr. Simpson, Dr. Dreschfield |
| Midwifery and Diseases of Women and Children | Dr. Thorburn |
| Materia Medica and Therapeutics | Mr. A. Somers, Dr. D. J. Leech |
| Medical Jurisprudence and Public Health | Dr. A. Ransome |
| Ophthalmology | David Little, M.D. |
| Botany | Prof. W. C. Williamson, F.R.S. |

J. Holme Nicholson, Registrar.

## THE SHEFFIELD SCHOOL OF MEDICINE

Is connected with the General Infirmary, the Public Hospital and Dispensary, and the Hospital for Diseases of Women. The General Infirmary contains 180 beds. The fee for perpetual attendance at the medical and surgical practice is 35 guineas. For perpetual attendance at lectures 40 guineas.

Introductory Address by Dr. W. Dyson, September 30, at 4 P.M.

LECTURERS.

| | |
|---|---|
| Anatomy | Mr. E. Skinner, Mr. Snell, Mr. R. J. Pye Smith, Mr. W. D. James, and Mr. W. Jackson |
| Physiology | Dr. Dyson, Dr. O'Keefe, and Dr. Gwynne |
| Principles and Practice of Medicine | Dr. De Bartolome, Dr. Thomas, and Dr. Banham |
| Principles and Practice of Surgery | Mr. W. F. Favell and Mr. A. Jackson |
| Chemistry | Mr. Allen |
| Dental Mechanics | Mr. G. Mosley |
| Midwifery and Diseases of Women | Dr. Hime |
| Materia Medica and Therapeutics | Dr. Young |
| Medical Jurisprudence and Toxicology | Mr. Harrison |
| Botany | Mr. Birks |
| Dental Surgery | Dr. Merryweather |
| Demonstrations of Pathology and Microscopy | The House Surgeon of the Infirmary |
| Public Medicine | Dr. Drew |
| Ophthalmic Surgery | Mr. Snell |
| Clinical and Practical Surgery, and Clinical Medicine | The Staffs of the Infirmary and Public Hospital |

Arthur Jackson, Hon. Sec., St. James's Row, Sheffield,
will supply further information.

## THE WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.

Founded 1848.—Beds 210.

This Hospital offers gentlemen intended for the Medical Profession opportunities of acquiring a complete professional groundwork and an elementary knowledge of medical subjects previously to their entering at a Medical College.

Instruction can be obtained in Chemistry, in Natural Philosophy, in the Anatomy of the Dry Bones, Ligaments, and Viscera, and in Topographical Anatomy, Practical Surgery, including the use of the Surgical Apparatus, the performance of Surgical Operations, and the demonstration of Morbid Surgical Anatomy.

In the Hospital the pupils are required to attend daily in the Casualty Room, in the Out-patient Department, and in the Wards, and are instructed in Bandaging, the Application of Splints, Tooth-drawing, and every kind of elementary professional detail.

Instruction in Elementary Medicine is given by Dr. Totherick and by Dr. Hunt, and in Elementary Surgery (in accordance with the regulations of the Royal College of Surgeons) by Mr. Vincent Jackson.

The practice of the Hospital is recognised by all the Examining Boards.

Fees for Hospital Practice—One year, ten guineas; Perpetual, twenty guineas.

Some members of the Honorary Staff receive Resident Pupils.

For further particulars apply to Mr. Vincent Jackson, Honorary Secretary to the Medical Committee, Waterloo Road South, Wolverhampton.

## EDINBURGH SCHOOL OF MEDICINE.

The Inaugural Address will be delivered by Dr. John Duncan, October 30, at 11 A.M.

Minimum fee, 90*l*. 4*s*.

LECTURERS.

| | |
|---|---|
| Anatomy | Dr. P. D. Handyside |
| Chemistry | Dr. Stevenson Macadam<br>Mr. J. F. King, Mr. I. Macadam |
| Surgery | Dr. P. H. Watson, Mr. J. Bell, Mr. Chiene, and Dr. Duncan |
| Institutes of Medicine | Dr. Andrew Smart |
| Clinical Medicine | Dr. R. Haldane, Dr. G. W. Balfour, Dr. C. Muirhead, and Dr. M. Duncan |
| Clinical Surgery | Dr. P. H. Watson<br>Mr. Annandale |
| Medical Jurisprudence and Public Health | Dr. Littlejohn |
| Practice of Physic | Dr. R. Haldane<br>Dr. C. Muirhead |
| Natural History Zoology and Comparative Anatomy | Dr. A. Wilson |
| General Pathology and Pathological Anatomy | Dr. J. Wyllie |
| Diseases of the Ear | Dr. K. Duncanson |
| Vaccination | Dr. Husband |
| Diseases of Children | Dr. R. P. Ritchie |
| Midwifery and Diseases of Women and Children | Dr. Keiller, Dr. M. Duncan, Dr. A. Macdonald, Dr. Underhill, Dr. H. Croom, and Dr. R. P. Ritchie |
| Diseases of the Skin | Dr. A. Jamieson |
| Diseases of the Eye | Dr. A. Robertson |
| Medical Anatomy and Practical Medicine | Dr. C. Muirhead |
| Insanity | Dr. J. B. Tuke |
| Syphilology | Dr. Cadell |

## ROYAL INFIRMARY, EDINBURGH.

Perpetual Hospital Tickets, 10*l*.

In this Hospital a portion of the beds is set apart for Clinical Instruction by the Professors of the University of Edinburgh. Courses of Clinical Medicine and Surgery are also given by the Ordinary Physicians and Surgeons. Special Instruction is given in the Medical Department on Diseases of Women, Physical Diagnosis, &c., and in the Surgical Department on Diseases of the Eye. Separate Wards are devoted to Fever, Venereal Diseases, Diseases of Women, Diseases of the Eye; also to cases of Incidental Delirium or Insanity. Post-mortem Examinations are conducted in the Anatomical Theatre by the Pathologist, who also gives practical instruction in Pathological Anatomy and Histology.

## EDINBURGH UNIVERSITY MEDICAL SCHOOL.

The University was founded in 1582, but the Medical School dates only from the commencement of the eighteenth century. The number of matriculations in medicine is now about 700 annually. The faculty is composed of the undermentioned gentlemen:—

| | |
|---|---|
| Materia Medica | Prof. T. R. Fraser |
| Chemistry | Dr. Crum Brown |
| Surgery | Prof. Spence |
| Institutes of Medicine | Dr. Rutherford |
| General Pathology | Dr. Sanders |
| Clinical Surgery | Prof. Annandale |
| Clinical Medicine | Profs. Maclaglan, Sanders, Stewart, and Fraser |
| Midwifery and Diseases of Women and Children | Prof. Simpson |
| Anatomy | Prof. Turner |
| Natural History | Sir C. Wyville Thompson |
| Practice of Physic | Prof. G. Stewart |
| Botany | Dr. J. H. Balfour |
| General Pathology | Prof. Sanders |
| Anatomical Demonstrations | Prof. Turner |

The minimum expenses for the medical instruction amount to 104*l*. 18*s*.; M.B. diploma, 15*l*. 15*s*. extra; C.M. diploma, five guineas more than M.B.; M.D. diploma, 15*l*. 5*s*. more than M.B.

## ANDERSON'S UNIVERSITY, GLASGOW.

### FACULTY OF MEDICINE.

Founded in 1796 by the will of Professor John Anderson, M.A., F.R.S. The fees for a complete course of medical instruction, extending over four years, amount to 48*l*. A double qualification may be obtained in Glasgow, the diploma costing 16*l*.

LECTURERS.

| | |
|---|---|
| Chemistry | Prof. Dittmar, F.R.S.E. |
| Surgery | Prof. Dunlop, M.D. |
| Anatomy | Prof. A. M. Buchanan, M.A., M.D. |
| Physiology | Prof. D. C. M'Vall, M.D. |
| Materia Medica | Prof. Morton, M.D. |
| Practice of Medicine | Prof. Charteris, M.D. |
| Ophthalmic Medicine | J. R. Wolfe, M.D., F.R.C.S.E. |
| Midwifery | Prof. J. G. Wilson, M.D., &c. |
| Medical Jurisprudence | Prof. A. Lindsay, M.D. |
| Botany | Prof. R. H. Paterson |
| Opthalmiology | Dr. Wolfe |
| Hygiene and Public Health | Dr. Christie |

## THE ROYAL INFIRMARY SCHOOL OF MEDICINE, GLASGOW.

The Hospital contains 570 beds. The number of in-patients last year was 4,979; of out-patients, 17,367. The number of operations was 371. Fee, hospital practice (perpetual) 21*l.*; classes and demonstrations, 31*l.* 10*s.*

LECTURERS.

| | |
|---|---|
| Chemistry | J. Clark, Ph.D. |
| Anatomy | H. C. Clark, M.R.C.S.E. |
| Physiology | W. T. Fleming, M.B. |
| Surgery | H. C. Cameron, M.D. |
| Medicine | A. W. Smith, M.D. |
| Materia Medica | J. Dougall, M.D. |

## GLASGOW UNIVERSITY MEDICAL SCHOOL.

Class fees for each course, three guineas, except lectures on the eye; hospital practice, life fee, 21*l.*
Introductory Discourse by Professor M'Kendrick M.D., October 29, 1878.

LECTURERS.

| | |
|---|---|
| Clinical Medicine* | Prof. M'Call Anderson |
| Clinical Surgery* | Prof. G. Buchanan |
| Chemistry | Prof. Ferguson |
| Anatomy | Prof. Cleland |
| Practice of Physic | Prof. Gairdner |
| Materia Medica | Prof. Cowan |
| Institutes of Medicine and Physiology | Prof. M'Kendrick |
| Surgery | Prof. Macleod |
| Midwifery | Prof. Leishman |
| Zoology | Prof. Young |
| Forensic Medicine | Prof. P. A. Simpson |
| Practical Pharmacy | Dr. Tennent |
| Botany | Prof. A. Dickson |
| Lectures on the Eye | Dr. T. Reid |

* The Clinical Lectures of the other Physicians and Surgeons of the Western and Royal Infirmaries are accepted by the University Court as qualifying for graduation.

## CARMICHAEL SCHOOL OF MEDICINE, IRELAND,

Formerly called Richmond Hospital School, is in immediate proximity to the Richmond, Whitworth, and Hardwicke Hospitals, which, together, form the House of Industry Hospitals, and contain an aggregate of 542 beds.

Aggregate fee (for lectures only), 56*l.* 3*s.* 6*d.*, payable in two instalments. Hospital practice extra.
The session commences October 1.

LECTURERS.

| | |
|---|---|
| Surgery | A. H. Corley, M.D., F.R.C.S., &c. |
| Practice of Medicine | Samuel Gordon, M.A., M.D., &c.<br>John Wm. Moore, M.D., &c. |
| Anatomy | Christopher Gunn, M.D., &c.<br>Wm. M. A. Wright, M.B., &c. |
| Physiology | Reuben J. Harvey, M.D., &c. |
| Institutes of Medicine | Stewart Woodhouse, M.D., &c. |
| Midwifery | Wensley B. Jennings, B.A., &c. |
| Chemistry | C. R. C. Tichborne, Ph.D., &c. |
| Ophthalmic Surgery | C. E. Fitzgerald, M.D., &c. |
| Botany | E. B. Blakeley, L.R.C.S., &c. |
| Materia Medica | George F. Duffey, M.D., &c. |
| Medical Jurisprudence | Hugh Auchinlick, L.R.C.S., &c. |

## NEW CARMICHAEL COLLEGE OF MEDICINE AND SURGERY.

The School will shortly be transferred from its present site to premises situate in Aurgier Street and York Place, Dublin.

| | |
|---|---|
| Anatomy | Dr. J. L. Stoney and Dr. C. Gunn |
| Physiology | Dr. R. J. Harvey |
| Surgery | Dr. J. K. Barton and Dr. A. H. Corley |
| Ophthalmic Surgery | Dr. Fitzgerald |
| Medicine | Dr. Gordon and Dr. Moore |
| Midwifery | Mr. W. B. Jennings Mr. A. V. Macau |
| Chemistry | Dr. Tichborne |
| Botany | Mr. Blakely |
| Materia Medica | Dr. Duffey |
| Medical Jurisprudence | Mr. H. A. Auchinlick |
| Institutes of Medicine and Pathology | Dr. S. Woodhouse |

## QUEEN'S COLLEGE, BELFAST.

### FACULTY OF MEDICINE.

This college (founded in 1845) is one of the Colleges of the Queen's University, Ireland. Regulations and fees as in the Galway College.

| | |
|---|---|
| Natural Philosophy | Joseph David Everett, M.A., D.C.L. |
| Chemistry | Thomas Andrews, M.D., LL.D., F.R.S., M.R.I.A., Hon. F.R.S.E. |
| Natural History and Geology | Robt. O. Cunningham, M.D., F.L.S. |
| Anatomy and Physiology | Peter Redfern, M.D., F.R.C.S. |
| Medicine | James Cuming, M.A., M.D., F.K.Q.C.P. |
| Surgery | Alexander Gordon, M.D. |
| Materia Medica | James Seaton Reid, M.D. |
| Midwifery | Robert F. Dill, M.D. |

## QUEEN'S COLLEGE, CORK.

### MEDICAL FACULTY.

Lectures commence November 1, 1877. Fee, exclusive of Hospital Practice, 35 guineas.

LECTURERS.

| | |
|---|---|
| Chemistry | M. Simpson, B.A., &c. |
| Natural History | R. Harkness, F.G.S., &c. |
| Anatomy and Physiology | J. J. Charles, M.A., &c. |
| Medicine | D. C. O'Connor, B.A., &c. |
| Surgery | W. K. Tanner, M.D., &c. |
| Materia Medica | M. O. Keefe, M.A., &c. |
| Midwifery | J. R. Harvey, B.A., &c. |

## QUEEN'S COLLEGE, GALWAY.

### FACULTY OF MEDICINE.

The college was founded in 1845, and is one of the three included in the Queen's University, Ireland. The first term of the session, 1878-79, commences October 16. Minimum fees for the degree of M.D., 39*l.* 5*s.*

PROFESSORS AND LECTURERS.

| | |
|---|---|
| Experimental Physics | Prof. Curtis |
| Chemistry | Prof. Rowney, Ph.D. |
| Botany and Zoology | Prof. Melville |
| Anatomy and Physiology | Prof. Pye |
| Practice of Medicine | Prof. Colahan, M.D. |
| Surgery | Prof. Browne |
| Materia Medica | Prof. N. W. Colahan |
| Midwifery | Prof. Kinkead |
| Medical Jurisprudence | Prof. Kinkead |

## DR. STEEVENS' HOSPITAL AND MEDICAL COLLEGE, DUBLIN.

Composition fee for lectures, 56*l.* 3*s.* 6*d.*; hospital practice, 12*l.* 12*s.* per year (of 9 months).

LECTURERS.

| | |
|---|---|
| Medicine | Dr. Grimshaw and Mr. Bookey |
| Materia Medica and Therapeutics | R. Johnston |
| Surgery | W. Colles, E.P.R.C.S.I. |
| Anatomy and Physiology | Dr. Hamilton, F. W. Warren, R. A. Hayes, and H. Pentland |
| Medical Jurisprudence | Dr. Tweedy |
| Midwifery | Dr. Isdell |
| Chemistry | Dr. M'Hugh |
| Botany | Mr. Fox |

## CATHOLIC UNIVERSITY OF IRELAND SCHOOL OF MEDICINE.

The school is situated in Cecilia Street, Dame Street, Dublin. Fees, three guineas each course of lectures. Practical Chemistry and Dissection, five guineas. The Session commences on October 1 with Practical Anatomy. An Inaugural Address will be delivered by Dr. Byrne.

LECTURERS.

| | |
|---|---|
| Anatomy and Physiology | Prof. Hayden and Prof. Cryan |
| Chemistry | John Campbell, M.B., &c. |
| Surgery | H. J. Tyrrell, F.R.C.S., &c. |
| Medicine and Pathology | R. D. Lyons, B.M., &c., |
| Midwifery | J. A. Byrne, B.A., M.B., &c. |
| Materia Medica | F. J. B. Quinlain, B.A., M.D. |
| Medical Jurisprudence | S. M. Macswiney, M.D., &c. |
| Botany | G. Sigerson, M.D., &c. |
| Natural Philosophy | G. Molloy, D.D. |
| Logic | D. B. Dunne, Ph.D. |
| Ophthalmology | P. J. Hayes, L.R.C.S.I., &c. |
| Pathology | R. W. Lyons, M.B., &c. |

## ROYAL COLLEGE OF SURGEONS IN IRELAND.

### SCHOOL OF SURGERY.

Introductory Lecture, October 29, by Dr. C. A. Cameron.

Composition fee (without hospital practice), 56*l.* 17*s.* 6*d.*

LECTURERS.

| | |
|---|---|
| Anatomy and Physiology | Dr. Mapother |
| Descriptive Anatomy | Dr. Bevan<br>Mr. Thornley Stoker |
| Surgery | Mr. J. Stannus Hughes<br>Mr. Stokes |
| Practice of Medicine | Dr. James Little |
| Chemistry and Hygiene | Dr. Cameron |
| Midwifery | Dr. Roe |
| Materia Medica | Mr. Macnamara |
| Medical Jurisprudence | Dr. Davy |
| Botany | Dr. Minchin |
| Ophthalmic and Aural Surgery | Mr. Swanzy |

## THE LONDON SCHOOL OF HOMŒOPATHY,

*52 Great Ormond Street, Russell Square, W.C.*

President—THE RIGHT HON. LORD EBURY.

The Winter Session will commence on Wednesday, October 2.

For particulars, apply to the Secretary, Fred. Maycock.

## VETERINARY EDUCATION.

### ROYAL VETERINARY COLLEGE, GREAT COLLEGE STREET, CAMDEN TOWN, LONDON.

The infirmary now contains accommodation for 100 horses, besides cattle, sheep, dogs, and other animals. It is fitted up with hot, cold, douche, and vapour baths; operating rooms, covered exercising ground, &c. Three of the new rooms are specially set apart as an infirmary for dogs.

Professors.

| | |
|---|---|
| Veterinary Medicine and Surgery .. | J. B. Simmonds, Principal |
| Anatomy ........................ | W. Pritchard, M.R.C.V.S. |
| Chemistry ........................ | R. V. Tuson, F.C.S. |
| Physiology ........................ | G. T. Brown, M.R.C.V.S. |
| Botany and Helminthology ........ | T. S. Cobbold, M.D., &c. |
| Histology and Morbid Anatomy .... | J. W. Axe, M.R.C.V.S. |
| Demonstrator of Anatomy ........ | J. H. Steel, M.R.C.V.S. |

### THE NEW VETERINARY COLLEGE, GAYFIELD, EDINBURGH.

The Introductory Address will be delivered at 2 P.M. October 24, 1877, by Professor Williams.

Fee (Inclusive), 37*l.* 16*s.*

Lecturers.

| | |
|---|---|
| Veterinary Medicine and Surgery .. | Prof. Williams, F.R.S.E., &c. |
| Anatomy ........................ | Prof. Vaughan, F.L.S., &c. |
| Physiology and Histology .......... | Prof. Young, M.D. |
| Chemistry ........................ | Dr. Macadam, F.R.S.E. |
| Botany ........................ | Prof. Craig Christie |
| Materia Medica, &c. .............. | Prof. Johnston, M.R.C.V.S. |
| Clinical Medicine and Surgery ...... | Prof. Williams and Prof. Johnston |

Principal—Prof. Williams.

### ROYAL COLLEGE OF SCIENCE FOR IRELAND (DUBLIN).

SCIENTIFIC AND TECHNICAL EDUCATION.

This college supplies a complete course of instruction in science, applicable to the industrial arts, especially those which may be classed broadly under the heads of chemical manufactures, mining, and engineering. A diploma of Associate of the college is granted at the end of the three years' course.

The fees are 2*l.* for each course, or 10*l.* for all the courses of each year, with the exception of laboratory practice. The session commences on October 1.

Professors.

| | |
|---|---|
| Chemistry, Metallurgy, &c......... | Prof. Galloway, F.C.S. |
| Mathematics, Mechanics, and Mechanism ........................ | Prof. Hennessy, F.R.S. |
| Descriptive Geometry, Drawing, Engineering, and Surveying...... | Prof. Pigot, C.E., &c. |
| Experimental Physics.............. | Prof. Barrett, F.R.S.E., &c. |
| Mining and Mineralogy ............ | Prof. O'Reilly, C.E., &c. |
| Botany........................ | Prof. McNab, F.L.S., &c. |
| Zoology ........................ | Prof. Leith Adams, F.R.S., &c. |
| Geology ........................ | Prof. Hull, F.R.S., &c. |
| Palæontology.................... | Mr. Baily, F.G.S. |

Secretary—F. J. Sidney, LL.D.

### LEEDS MECHANICS' INSTITUTE AND LITERARY SOCIETY.

*Cookridge Street, Leeds.*

Mr. George Ward, F.C.S., with assistants, conducts evening classes in Elementary and Advanced Inorganic Chemistry, in Organic Chemistry, Practical Chemistry, and Metallurgy.

Fees per Session (Payable in Advance).

| | | Middle Class Students | | | *Artisan Students | | |
|---|---|---|---|---|---|---|---|
| | | £ | *s.* | *d.* | £ | *s.* | *d.* |
| Inorganic Chemistry | (Elementary Course—Thursday) .. .. | 0 | 15 | 0 | 0 | 7 | 6 |
| ,, ,, | (Advanced Course — Friday) .. .. | 0 | 15 | 0 | 0 | 7 | 6 |
| Organic ,, | Tuesday .. .. | 0 | 15 | 0 | 0 | 7 | 6 |
| Laboratory Course | (Tuesday and Thursday) two evenings in the week .. | 2 | 0 | 0 | 1 | 7 | 6 |
| ,, ,, | One evening in the week .. .. | 1 | 1 | 0 | 0 | 15 | 0 |
| Metallurgy | Friday .. .. | 0 | 15 | 0 | 0 | 7 | 6 |

* Pupils paying artisan fees will be expected to attend not less than twenty-five times during the session, and to present themselves for the next May Examination in connection with the Science and Art Department, or failing this, to pay the advanced fees.

### THE YORKSHIRE COLLEGE, LEEDS.

This institution is intended to promote scientific education among the manufacturing classes. There is a special department for instruction in matters concerning the Textile Industries, which is endowed by the London Clothworkers' Company. Besides these, instruction is given in Mathematics, Experimental Physics, Chemistry—Theoretical and Practical, Geology and Mining, Biology, Zoology, Civil and Mechanical Engineering, Classical and Modern History, and Literature and Botany. Various scholarships are offered, and the College holds endowments for providing courses of lectures in other towns. The title of Associate in Physical Science is conferred on students who attend classes in not less than three of the following departments for two entire sessions each, and who pass a special examination in each class at the end of their curriculum. The departments are: Mathematics, Physics, Chemistry, Geology, Biology, and Civil and Mechanical Engineering. Entrance fee to the college, 1*l.* 1*s.*; use of library, 2*s.* 6*d.* per session. Each class has separate fees. The College Calendar (6*d.*) contains full information as to classes, fees, &c. The fees for the laboratory course of chemistry are 17 guineas a session.

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## THE DENTAL PROFESSION.

The Dentists Act, which received Royal Assent on July 22, has drawn considerable attention to the subject of Dental Education. That Act makes it compulsory for all would-be dentists to pass some approved examination unless they were in practise at the time the Act passed.

A young man intending to be a dentist must, at the outset of his career, pass a "preliminary examination," such as is required from fledgling doctors. That of the London University is in this, as in all other cases, the most difficult and the best.

The Royal College of Surgeons is the only body which has examinations in Dental Science already established. Other examining bodies will, probably, inaugurate such examinations during the present year. In the meanwhile we give the regulations of the first-mentioned.

Candidates for the Diploma in Dental Surgery are required to produce the following certificates:—

1. Of being twenty-one years of age.
2. Of having been engaged during four years in the acquirement of professional knowledge.
3. Of having attended at a school or schools recognised by this college, not less than one of each of the following courses of lectures, delivered by lecturers recognised by this college, namely:—Anatomy, Physiology, Surgery, Medicine, Chemistry, and Materia Medica.
4. Of having attended a second winter course of Lectures on Anatomy, or a course of not less than twenty lectures on the Anatomy of the Head and Neck, delivered by lecturers recognised by this college.
5. Of having performed dissections at a recognised school during not less than nine months.
6. Of having completed a course of Chemical Manipulation, under the superintendence of a teacher or lecturer recognised by this college.
7. Of having attended at a recognised hospital or hospitals in the United Kingdom the Practice of Surgery and Clinical Lectures on Surgery during two winter sessions.
8. Of having attended, at a recognised school, two courses of lectures upon each of the following subjects, namely:—Dental Anatomy and Physiology (Human and Comparative), Dental Surgery, Dental Mechanics, and one course of lectures on Metallurgy, by lecturers recognised by this college.
9. Of having been engaged, during a period of not less than three years, in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent practitioner.
10. Of having attended at a recognised dental hospital, or in the dental department of a recognised general hospital, the Practice of Dental Surgery during the period of two years.

The examination is partly written and partly oral. The written examination comprises General Anatomy and Physiology, and General Pathology and Surgery, with special reference to the practice of the Dental Profession. The oral practical examination comprises the several subjects included in the curriculum of professional education, and is conducted by the use of preparations, casts, drawings, &c. Those who are already members of the College (and who are, therefore, fully qualified surgeons) will only be examined in matters specially pertaining to dentistry. A candidate whose qualifications are found to be insufficient will be referred back to his studies, and, except under special circumstances, will not be eligible for re-examination for six months.

Examinations are held in January, June, and October. The fee for the diploma is ten guineas over and above any stamp duty. A ticket of admission to the Museum, Library, and College Lectures will be presented to each candidate on his obtaining the diploma. This document gives him the title L.D.S. (Licentiate in Dental Surgery), and entitles him to registration.

The special knowledge required by a thoroughly qualified dentist can now be obtained at most of the larger medical schools.

The programmes under the heading of the Medical Profession will give the names of the teachers and the fees for the courses of study.

But special advantages and facilities are provided by the National Dental Hospital and College, 149 Great Portland Street, London, W.; and the Dental Hospital of London, Leicester Square, W.C.

**National Dental Hospital and College.** Established in 1861. and re-opened as a college in 1877. Aggregate fee for special lectures and hospital practice required by the curriculum, 24 guineas.

Lecturers.

| | |
|---|---|
| Dental Anatomy and Physiology .. | Mr. Thomas Gaddes, L.D.S., R.C.S. |
| Dental Surgery and Pathology .. | Mr. Oakley Coles, L.D.S., R.C.S. |
| Dental Mechanics .. .. .. | Mr. G. J. Williams, L.D.S., R.C.S. |
| Dental Metallurgy .. .. .. | Mr. Alfred Tribe, F.C.S., Fell. Inst. Chem. |

Supplemental Lecturers.

| | |
|---|---|
| Dental Materia Medica .. .. | Mr. James Stocken, L.D.S., R.C.S. |
| Elements of Histology.. .. .. | Mr. Thomas Gaddes, L.D.S., R.C.S. |
| Demonstrator of Dental Mechanics.. | Mr. Harry Rose, L.D.S., R.C.S. |
| Deformities of the Mouth .. .. | Mr. Oakley Coles, L.D.S., R.C.S. |
| Arts and Literature .. .. .. | Rev. H. R. Belcher, M.A. |

## NATIONAL DENTAL HOSPITAL AND COLLEGE.

149 *Great Portland Street.*

Total fee for hospital practice and lectures, 36 guineas.

LECTURERS.

| | |
|---|---|
| ental Anatomy and Physiology.... | T. Gaddes, L.D.S. |
| ental Surgery and Pathology .... | O. Coles, L.D.S. |
| ental Mechanics .................. | C. G. J. Williams, L.D.S. |
| ental Metallurgy ................. | A. Tribe, F.C.S. |
| ental Materia Medica ............. | Mr. James Stocken, L.D.S., R.C.S. |
| ements of Histology .............. | Mr. Thomas Gaddes, L.D.S., R.C.S. |
| emonstrations on Dental Mechanics | Mr. Harry Rose, L.D.S., R.C.S. |
| eformities of the Mouth.......... | Mr. Oakley Coles, L.D.S., R.C.S. |
| rts and Literature ............... | Rev. H. R. Belcher, M.A. |

## LIVERPOOL DENTAL HOSPITAL.

29 *Russell Street, Liverpool.*

This Hospital is a school of Practical Dental Surgery duly recognised by e Royal College of Surgeons and open to all students of dentistry, under ich regulations as shall be determined by the committee of management.

The Hospital is open daily for the admission of patients at 9 A.M.

Fees for Hospital practice 10*l.* 10*s.* per annum.

Further information may be obtained by applying to the honorary secretary, W. J. Newman, Esq., 75 Mount Pleasant.

## DENTAL DISPENSARY.

*Octagon, Plymouth.*

Total fee, 22 guineas.

LECTURERS.

| | |
|---|---|
| ental Physiology ................ | C. Spence Bate, F.R.S. |
| ental Anatomy ................... | F. H. Balkwill |
| ental Mechanics ................. | W. V. Moore |

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## SCIENTIFIC EDUCATION.

A young man without capital who devotes himself entirely to the study of science must expect a hard life. For chemists there are occupations of three classes. The scientific chemist may be a teacher, an analyst, or industrial chemist. In neither case is it easy to get established, and often the same man follows all three occupations.

A young man provided with much enthusiasm, and but little money, must endeavour to get a situation in some laboratory. He may have to begin as bottle washer, and wait years before he will be promoted to assist his master. Even then his salary will be but nominal, and the labour of years will probably be needed before he can gain a position for himself.

If he have an income to commence with he should spend several years in a recognised school. During the first year or two he must lay a sound foundation of general scientific knowledge. He must then decide which branch of chemistry he will choose to live by, and devote himself exclusively to that. The kind of openings he should seek is beyond our province. For thoroughly qualified analysts there is a demand which will be permanent. The manufacture of all kinds of chemicals, of artificial dyes, of naphtha and gas, the destructive distillation of shale, the smelting of all kinds of ores require the direction of a scientific man, and occasionally present openings which lead to splendid fortunes. The vacancies for teachers are generally filled from the ranks of workers in the field of chemistry.

At the Universities of Oxford, Cambridge and Dublin, and Durham; at King's College, London; University Colleges, London and Bristol; and at the Royal College of Science for Ireland, and Anderson's College, Glasgow, chemistry may be studied in all its branches. At most of these the student must become a collegian. Full particulars can be obtained from the calendars, or by application to the respective secretaries.

The Science and Art Department, South Kensington, provides examinations in all branches of science. These are divided into three stages, "elementary," "advanced," and "honours." A calendar is published annually, and will be forwarded by the Secretary on receipt of six stamps. It contains full details of the subjects for examination, of the method of establishing science schools, and of the various scholarships open to students. From the Secretary to the Royal School of Mines may be obtained the calendar, which gives details of the fees, the courses of instruction, and the scholarships. A limited number of pupils are received into the Royal Laboratories at South Kensington, and receive thorough practical training in chemistry, physics, and metallurgy. Information on this subject will be supplied by the Secretary to the Science and Art Department, South Kensington.

University College, London, offers special facilities for the study of applied chemistry. During the coming session courses of lectures on the chemistry of brewing, the alkali trade, soap, glass, pottery, cements, and agriculture, will be delivered. In the session 1879-80, heating, lighting, gas, fuel, furnaces, metallurgy, dyeing, calico printing; and paints, oils, and varnishes, or distilling, vinegar making, and bread and biscuit baking will be treated. Students can receive individual instruction in photography and photographic materials, paper making, gas-tar products, the products of the distillation of wood, and tanning, and other chemical industries. The Secretary will supply all information.

The Royal Agricultural College, Cirencester, gives a full course on chemistry applied to agriculture.

The Yorkshire College, Leeds, and Owens College, Manchester, provide full courses of instruction in technical science. The latter is unusually well provided with scholarships. The "Young Chair of Technical Chemistry," Anderson's College, Glasgow, is devoted to applied chemistry. The fee for laboratory instruction is in most cases about 2*l.* a month.

## THE UNIVERSITY OF LONDON DEGREES IN SCIENCE.

The London University grants degrees in Science, which are highly esteemed. They are Bachelor and Doctor in Science. We give a summary of the regulations:—

### B.Sc. Lond.

For this degree the candidate must have passed the Matriculation Examination at least one academical year (in this case about sixteen months) before presenting himself for examination. He must then pass two examinations, entitled the First and Second B.Sc. Examinations. The First B.Sc. Examination is held on the third Monday in July, and extends over two weeks. The fee is 5*l.*, and before entering the student must produce a satisfactory certificate of good conduct. Candidates are examined in Pure Mathematics (Arithmetic, Algebra, Geometry, and Trigonometry), Mixed Mathematics, Inorganic Chemistry, Experimental Physics (Acoustics, Heat, Magnetism, Electricity, and Optics), General Biology. During the second week the candidate is examined practically in Chemistry and Biology. Candidates must show a competent knowledge of all these subjects. After passing the first B.Sc. Pass Examination, the candidate may be examined for honours in Mathematics, Experimental Physics, Chemistry, Botany, and Zoology, or in either. These examinations enter more fully into the subjects of the Pass Examinations.

The Second B.Sc. Examination is held on the third Monday in October in each year. Fees and regulations are the same as for the first examination. Candidates are required to show a competent knowledge of any three of the nine following subjects:—1. Pure Mathematics (Algebra, Trigonometry, Geometry, Differential Calculus, and Integral Calculus); 2. Mixed Mathematics (Dynamics and Astronomy); 3. Experimental Physics (Acoustics, Heat, Optics, Magnetism, and Electricity); 4. Chemistry (Inorganic and Organic), with practical Qualitative Analysis; 5. Botany (Histology, Morphology, Physiology, and practical dissection and description); 6. Zoology, with practical examination and dissection; 7. Animal Physiology, with practical examination; 8. Physical Geography and Geology, and practical examination. 9. Logic and Psychology.

On passing the requisite examination a certificate with the seal of the university is presented to each candidate. Candidates may also be examined for honours in any subjects they select.

### Doctor of Science.

The examination for this degree takes place during the first three weeks of June in each year. Candidates must have obtained the degree of B.Sc. at least two academical years previously. The fee is 10*l.*, payable on or before April 1 of the year in which the candidate intends to present himself for examination. The candidate is examined in any one of the sixteen following branches. He must be so fully acquainted with the "principal subject" (to be selected by himself) as to be able to go through any examinational test of his acquirements that can be fairly applied. He must also show a general acquaintance with the subsidiary subject or subjects of the selected branch. The branches are:—

1. Pure Mathematics; 2. Mechanical Science; 3. Astronomy; 4. Inorganic Chemistry; 5. Organic Chemistry; 6. Electricity; 7. Magnetism; 8. Physical Optics, Heat, Acoustics; the above are grouped under Physical Science. 9. Animal Physiology; 10. Comparative Anatomy; 11. Zoology; 12. Vegetable Physiology; 13. Systematic Botany; are included under Biological Science. Geological and Palæontological Science: 14. Geology; 15. Palæontology; 16. Mental Science, Logic and Moral Philosophy.

Full information, syllabus, and specimens of examination papers are given in the "Calendar," published yearly. Price 4*s.*

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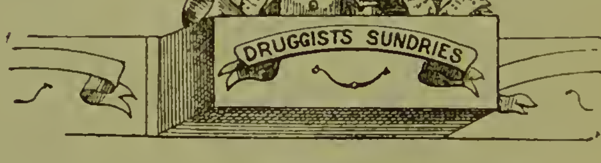

"DRAW IT MILD," as the sufferer said to the dentist.

A MISSISSIPPI DOCTOR has found a substitute for quinine: he binds a lump of ice on a patient's spine, and the "shakes" let go and start for Arkansas, a chills and fever resort.

A PUBLICAN at Hyde, charged with selling diluted gin, actually stated in defence that 16 per cent. of spirit must have evaporated through the bunghole.

A LADY CHEMISTRY STUDENT, hearing a sailor spoken of as an "old salt," afterwards alluded to him as a "venerable sodium chloride."

ORDER RECEIVED by a rustic dentist, which says: "My mouth is three inches across and five-eighths inch through the jaw. Some humoky on the edge. Shaped like a hoss shoe, toe forward. If you want me to be more partikler, I shall have to cum thar."

AN ABSENT-MINDED DOCTOR, on calling upon a gentleman who had been some time ailing, put a fee into the patient's hand, and took the medicine himself which he had prepared for the sick man. The medical man was not made sensible of his error till he found himself getting ill and the patient getting better.

**The Badness of Trade.**—Shopkeeper (to Commercial Traveller).—"Can't give you an order. Quite over-stocked." Traveller.—"Let me, at least, show you my samples." Shopkeeper.—"Spare yourself the trouble. I can't look at them." Traveller.—"Then will you allow me to look at them myself? It is three weeks since I have even seen them."—*Funny Folks.*

A **Father**, who had passed innumerable sleepless nights, has immortalised himself by discovering a method of keeping babies quiet. The *modus operandi* is as follows:—As soon as 'pet" awakes, set it up, propped by a pillow, if it cannot sit alone, and smear its fingers with treacle; then put half-a-dozen feathers into its hand, and it will sit and pick the feathers from one hand to the other until it drops asleep. As soon as it wakes again, repeat the operation; and in place of the fret and cry of former nights, there will be silence and quiet repose.

**Presence of Mind.**—At the closing of a concert, while a young gentleman was struggling with his hat, cane, overcoat, opera-glass, and his young lady's fan, all of which he was trying to retain on his lap, a conspicuous-looking black bottle from the overcoat pocket fell on the floor with a loud thud. "There!" he exclaimed to his companion, "I shall lose my cough medicine." That was presence of mind.

**Botanical Students.**—A relative of the late owner of the Villa Muret and its magnificent gardens at Antibes, near Cannes, has presented to the French nation this valuable property. It is to be maintained as a sort of laboratory for working botanists, at the expense of the Government. There is an excellent herbarium, microscopes, a library, and everything the student requires; free lodging, too, will be given for six weeks to any botanist who wishes to avail himself of the resources offered. The offer is open to botanists of all nations. A recommendation from some known man of science is only required.

# EXCHANGE COLUMN.

**Terms.**—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of The Chemist and Druggist, and all correspondence relating to it must be addressed to the "Publisher of The Chemist and Druggist, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

## FOR DISPOSAL.

Quantity of small cuttle fish or powdered for sale. J. C. Chubb, 29 Old Street, London.

Microscope, cost 3*l.* 17*s.* 6*d.*, what offers? Full particulars given. 39/203.

20 ½-cwt. kegs chlor. calcis opt., quite dry, 5*s.* each; four, carriage paid. Scott & Son, Drysalters, Rochdale.

Show-case, 3 feet 2 inches long, otherwise similar to Maw's fig. 23, page 150, with carving, for 7*l.* 10*s.* Hebden, Chemist, Halifax.

6 each—two, three, and four-shilling jars Biggs' sheep-dipping composition; half retail price or exchange. Upton, Wallingford.

Sikes' hydrometer in mahogany case; weights, thermometer, immersion tube; complete, new, 2*l.* 15*s.* Kemble, Mevagissey.

For 5*l.*—3 160-gallon oil cisterns, with taps and gauge; quinine to exchange for patents. H., 196 Union Street, Oldham.

Bell-metal mortar, sound, weight 160 lbs., holds 2 gallons, price 6*l.* 6*s.*; Sike's hydrometer, by Long, 2*l.* 2*s.*, cost new 4*l.* 4*s.* 19/199.

⅙ doz. 33*s.*, ⅓ doz. 4*s.* 6*d.*, Buchan's vegetable ess.; ¼ doz. 11*s.*, ¾ doz. 2*s.* 9*d.*, ½ doz. 1*s.* 1½*d.*, Buchan's sugar-coated pills, 30*s.* lot. 34/201.

Labelled shop quarts, pints, and 60 ozs., about 16 dozen, also globes, cases, scales, &c., to be sold cheap. Alpha, 34 High Street, Putney.

Twelve pairs Tomes' forceps, lancet, and key, in velvet-lined mahogany case; 48*s.*; all good as new. Meldrum, Chemist, Leith.

Bentley's Botany, good as new, post free for 10*s.* 6*d.* E. Richards, 66 Goldhawk Road, Shepherd's Bush.

Four thousand gross large tapered daffy corks, 4*d.* gross; sample 1 stamp. H., 41 Chancery Lane, Ardwick, Manchester.

100 ozs. morphia hydrochlor., English, in 1-oz. bottles, what offers? and for what quantity. 36/203.

Copper measure, bell-shaped, 2 gallon, perfect, 15*s.*; ditto, 1 gallon, 8*s.* J. Floyd, Bury St. Edmunds.

An air-tight mattress, with pillow, and bellows for inflating, 88 by 36, price 40*s.* H. Richardson, Chemist, Chesterfield.

Entire fittings of 3 handsome chemists' shops; will be altered to suit any shop. Lloyd Rayner, 333 Kingsland Road, London, N.

Chapman's entire wheat flour. About 5*l.* worth (wholesale) fresh from vendors. What offers? E. G., 59 Moorgate Street, London, E.C.

Five hundred questions asked at Minor Examinations during past session, 7*s.* 6*d.*, letters only. To "Major," 24 Shakespere Road, Herne Hill, London.

A nest of 126 chemist's shop drawers, labelled, with four shelves and supports above same, good condition. Offers wanted; will be sold cheap. B., 219 Lake Road, Portsmouth.

Square lamp with three ruby lenses and bracket, 4 carboys, two 10, one 2, one ½ gallon glass percolator; 5-grain pill machine for 18. C., 20 Sussex Street, Pimlico.

Nest drawers, fig. 182 Maw's, gold labels, black knobs, good as new, 4-grain pill machine with marble slab, quart tincture press, ointment slab. Samuel Biggin, Yorkley, Lydney.

Materia medica cabinet, of 150 specimens, each in separate box, and 60 indigenous plants, mounted and named, 5*s.* the two. Tully, Chemist, Tunbridge Wells.

Aconite, hyoscyamus, hemlock, belladonna and 120 more officinal and other useful plants beautifully mounted; invaluable to students; 10*s.* 6*d.* free. Higginson, Newferry, Birkenhead.

Fifteen oil cisterns from 80 to 120 gallons, cheap, second-hand fittings to fit a shop of any size, cheap; 100 second-hand case and dispensing screens. Tomlinson, St. Paul's Square, Birmingham.

Three nests of mahogany drawers, with painted lockers, 9 feet 2, 5 feet 3, and 2 feet 4 wide, and 4 feet 2 inches high, and also glass cases. William S. Yates, Chemists' Fitter, Liverpool.

Fifty mounted botanical specimens, forming typical and natural illustrations of the organs, in accordance with Judd's "Structural Botany," price 10*s.* Judd, 43 Great Coram Street, W.C.

One hall stove, Minton tile panels, marble top, descending flue, cheap; 1 Shank's 16-inch 1878 lawn mower, been little used, can recommend it, equal to new. Apply, Tremain, Orpington.

27 vols. *Pharmaceutical Journal*, from 1841 to 1868, half-bound, in excellent condition, with index to first 15 vols.; offer wanted. Edward Wood, Bromfelde Road, Gauden Road, Clapham.

Insect powder, best quality, about 190 lbs., 14 lbs., 1*s.* lb., cash; quantity less price; what offer for the lot? Show jar, 24 inches high, plain gilt lid, Maw's Fig. 19; price 34*s.* cash. Lockwood, Chemist, Sheffield.

Gun, handsome and superbly finished, double-barrel, breech-loader, 12-gauge, central fire, patent bar-rebounding locks, finest Damascus barrels, cost 15*l.* 15*s.*, and never used; price, 7*l.* 10*s.* Halford, Chemist, New John Street, Birmingham.

Homœopathy—one of Leath & Ross's 4 guinea cases, full, and equal to new, 2*l.* 15*s.*; also 15 doz. Leath & Ross's 1*s.* tinctures at 4*s.* per doz.; 16 doz. 9*d.* pilules at 3*s.*, and 9 doz. 6*d.* globules at 2*s.*; all in excellent condition. H. Hibbing, 46 High Street, Stamford.

To Chemists and Dentists.—For disposal, very low, a glass tablet, size 31½ inches by 8⅞ inches, "Dentist" on gold letters, chocolate ground; also first-class vulcanite and metal specimens. For particulars and price address "Dens," care of Messrs. Wright, Layman & Umney, 50 Southwark Street, London.

Minor Students.—50 questions asked of a successful candidate at last Minor, 2*s.*; 80 prescriptions given to dispense at the Minor, 2*s.*; 50 illegible prescriptions, 2*s.* 6*d.*; 80 mounted indigenous plants, 5*s.* "Chemist," care of Mr. Edwards, London House, Petham, Canterbury.

leum cistern, new 18 months ago, galvanised ron brass tap, and false wood bottom, holds ver 100 gallons, price 3*l.* 10*s.* J. Hill, Wingate, *viâ* Ferryhill.

re fittings of chemist shop, with bottles, counters, cases, clock, soda-water stand, &c., suitable for beginner; cheap. Chemist, 1 Hammersmith Road.

r.—Complete set of lessons on all subjects for this examination lent to copy, 5*s.*; a collection of questions asked at the Minor, 2*s.* 6*d.*; "Notes on Dispensing," with prescriptions given to dispense at the Minor, 2*s.* 6*d.* H. G., 2 Parnell Villas, Waddon Old Road, Croydon.

14 gallon carboys, cut stoppers, 40*s.* each; several upright cases, from 30*s.* each; wall case, 4 ft. 1 in. long, 4 ft. 6 in. high, 50*s.*; a ditto ditto, 4 ft. long, 47 in. high, 45*s.*; a quantity of specie jars, glass gold covers, elaborately labelled, 10 in. 6*s.* each, 12 in. 8*s.* each, 14 in. 9*s.* each. E. Natali, 213 Old Street, E.C.

Invoice of drugs and chemicals collected from the best houses for export, but not forwarded, including 6 lbs. potass iodid., 6 oz. quinine, tinct. opii, tinct. camph. co., and other useful preparations; will suit retail chemist or practitioner; to be sold cheap. Send for list to "India," City News Rooms, Ludgate Circus, E.C.

nty gross ounce gallipots, 2*s.* gross; gross 16-oz. castor oil bottles, new and second-hand, 10*s.*; 6 dozen lanterns, burning petroleum, colza, or candle, 18*s.*; 5 cwt. creta precip. 20*s.*; cwt. Myer's cattle spice, any reasonable price; 5 cwt. argols, any reasonable price; 3 cwt. pulv. Cape aloes, 6*d.*; pomade bottles, odd lot, 4*s.* gross. Newham & Co., Castle Hill, Sheffield.

old and silver plating battery, equal to new, ½ pint each; gold and silver solution; easily worked. and profitable; having no time to work it, will sacrifice for 15*s.* Wills's "Materia Medica," coloured plates. good condition, cost 10*s.* 6*d.*, take 6*s.* 6*d.* free. Manuscript Notes on Chemistry and Pharmacy, 5*s.* each; valuable to those preparing for examination. Pharmacist, 4 Harbour Street, Folkestone.

Preliminary Students.—Smith's "Principia Latina," Arnold's Latin, Latin Rudiments, Macturk's Physical Geography, Cornwell's English Grammar, Dimbleby's Shorthand, Hopkins's Orthographical Exercises, Euclid, Geometry, and Algebra, Colenso's Arithmetic, "Pharmaceutical Calender;" also a capital 54-inch bicycle, bright, strong, and, like the books, in good condition. Cash offers? E. Holifield, Faringdon.

12-ft. set of fittings, as Maw's fig. 196, mahogany-fronted drawers, shelving, pilasters, and cornice, all newly-labelled and glass knobs, equal to new, 18*l.*, a bargain; a very elaborate 6-ft. dispensing screen, glass case at each end, looking-glass centre; with marble slab in front, handsome tablet on top, "Dispensing Department," silvered plate-glass backs to cases, all plate-glass, in first-class condition, 8*l.* 10*s.*; a 7-ft. ditto ditto, 9*l.* E. Natali, 213, Old Street, E.C.

bargain.—Nests of drawers, shelving, window fittings, wall glass case, counter case, desk with glass case in front, numerous specie jars, carboys, cylinders, and about 31 dozen bottles and pots, also iron safe. The above will either be disposed of in one lot or separately to suit the convenience of purchasers. Particulars to be had of Messrs. Hawke & Son, Wild Court, Great Wild Street, W.C., or the goods may be viewed by applying to Messrs. Bird & Storey, 42 Castle Street East, Oxford Street, London, W.

Plate-glass sponge case, as fig. 90, 4*l.*; a ditto ditto, as 92, 5*l.*; an upright case to stand on floor in front of counter, 4 ft. long, 3 ft. high, marble top, 4*l.*; a very good desk and glass case, as fig. 21, plate glass and silvered glass back, 70*s.*; a quantity of mahogany fronted shelving, 7*d.* per foot run; a 10-ft. mahogany-top counter; a counter case, fitted with trays, ebonised mahogany, 8*l.* 10*s.* E. Natali, 213 Old Street, E.C.

Fresh specimens of every indigenous medicinal plant in season, botanically described, with directions for preserving (send stamp for list), 5*s.* per set; reagent labels, showing equations, formulæ, and other useful information, 1*s.* 6*d.* per set; 50 questions asked at July Minor (London or Edinburgh), 2*s.*; 30 prescriptions (catch and difficult) given to dispense at Minor during past twelve months, with modus operandi, 2*s.* How to learn the Pharmacopœia extracts and tinctures in four lessons, 2*s.* 6*d.* Saunders, Private Tutor, &c., 79 Gaisford Street, N.W.

Several pill machines, almost new, 2-grain, 3-grain, 4-grain, and 5-grain, to cut 24, 16*s.* 6*d.* each; Wedgwood mortars, new; shop bottles; 18 new 6-lb. blue ointment jars, labelled any name, 4*s.* each; 24 white ditto ditto 6-lb., 2*s.* 9*d.* each; 18 3-lb. blue, 2*s.* 4*d.*; 26 1-lb. brown stone, japanned covers, 25*s.* lot; a 48 5-grain pill machine, marble slab, 30*s.*; 12 6-12 lilac ointment jars, 35*s.* lot; a very elaborate specie jar, 37-in. high, Royal arms, gold cover, equal to new, 90*s.*; 24 6-in. jujube jars, labelled, 2*s.* 9*d.* each; a quantity of specie jars, fancy jars, as figs. A and D, very cheap. E. Natali, 213 Old Street, E.C.

A bent plate-glass counter case, 3 ft. long, 60*s.*; a do. do., 3 ft. 6 in., 65*s.*; a 4-ft. do. do., 75*s.*; a 5-ft. do. do., 95*s.*; a 5-ft., as 105, 5*l.*; a 6-ft., as 105, 6*l.* 90*s.*; a 5-ft. 6-in., as fig. 99, 6*l.* 10*s.*; a 5-ft. 9-in., as fig. 96, 5*l.*; a 3-ft. 10-in., as fig. 101, 4*l.*; a 4-ft. do. do., 85*s.*; a 3-ft. 6 in., as fig. 100, 75*s.*; a 2-ft. 6-in. and 2-ft. 9-in., as fig. 16, 40*s.* each; a plate-glass dispensing screen, as 164, with tablet equal to new, 7*l.*; a 7-ft. do. do., stout sheet glass, 6*l.*; a 4-ft. dispensing screen, 75*s.*; a mahogany dispensing counter and screen, 4-ft. 6-in. long, 7*l.*; a 3-ft. mahogany-top dispensing counter, 35*s.*; a 6-ft. 6-in. do. do., fitted with drawers, 70*s.*; a 7-ft. do., 22 drawers, 80*s.*; several nests of mahogany drawers, from 3 ft. to 12 ft. long, with lockers under, glass knobs, and newly labelled. E. Natali, 213 Old Street, E.C.

4 ft. long, 4 ft. 4 in. long, 5 ft. 4 in. long, 8 ft. 6 in. long, 9 ft. long, flat, plate-glass counter cases; 5 mahogany upright counter cases, all sizes; 4 mahogany upright counter cases with desks; 3 desks with screens in front; 13 bent-glass counter cases; 10 ft. long, 12 ft. long, 16 ft. long deal stained mahogany, gold-labelled shop drawers, with lockers, shelving, and cornice above; 7 ft. long, 7 ft. 6 in. long, 10 ft. long, 12 ft. long, 14 ft. long, mahogany-fronted, gold-labelled shop drawers, with shelving and cornice above; 7 nests mahogany-fronted, gold-labelled shop drawers; 8 mahogany moulded top counters, all sizes; 3 handsome Spanish mahogany panelled, fronted counters, one 12 ft. long mahogany top counter, with handsome plate-glass cases in front; mahogany label chest; tooth-brush case, as 72 Maw's; 2 dozen 12-lb. tea canisters; 28-lb. treacle cistern; 4 10-gallon oil cisterns; 6 2-gallon varnish tins; 3 sugar and tea mills; handsome coffee mill; 6 112-lb. store canisters; 8 handsome tea bins, 12 ft. long, with shelving and cornice above. Lloyd Rayner, 333 Kingsland Road, London, N.

Nests of drawers, window enclosures, glazed cases, shop jars all sizes and colours, show bottles, specie jars, store bottles, pill machines, and every requisite; also medical books, surgical instruments, tobacconists' show-cases, jars, &c., cheap to clear out. Handsome vase satin flowers, 2*l.*; sewing machine, 2*l.* 294 Old Kent Road.

## FORMULÆ.

A first-class recipe to make cattle food, price 10*s.*, none better made. Sheel, Chemist, Low Fell, Gateshead-on-Tyne.

For perfumes equal to any in the kingdom.—Specialité, "White Rose." 1*s.* 6*d.* each kind. Address, J. Anderson, 98 Queen Street, Exeter.

Receipt for an elegant inseparable lime cream, 30 stamps. Extract from letter:—"Have tried for years to make a similar cream without success. "Chemicus," 18 Gladstone Street, Moss Side, Manchester.

Cordials.—Valuable Recipes to Chemists and Spirit Merchants.—Peppermint, cloves, shrub orange-bitter, ginger brandy, noyau, 2*s.* each or 10*s.* the six, worth 10*s.* each. T., 8 Carlton Terrace, South Boulevard, Hull.

Recipe for cholera, dysentery, cramp, diarrhœa, asthma, and chronic coughs. Price 1*l.* 1*s.* (to one person, 20*l.*). This remedy is admitted by physicians to be a most extraordinary combination. J. Anderson, 98 Queen Street, Exeter.

Furniture paste, very superior, cleans and puts a brilliant gloss on polished or other furniture, &c., 2*s.* 6*d.*; baking powder (original), worth 10*s.*, 2*s.* 6*d.* The excellence of these preparations secures for them a good sale. Reference or sample post free. H. Hare, 81 South Street, Goole.

## WANTED.

A formula for a really good cough mixture. 29/202.

A pill machine (24); also 30 lbs. blue syrup bottles. Apply, J. Kershaw, Southport.

A chemists' lamp, small. State size, condition and price, Cross, Chemist, Reading.

Large iron or bell-metal mortar. Perks, 1 Sloane Square, London.

Cocking's pill machine and piping press, small size, cheap. Campkin, Cambridge.

Petroleum cistern, 80 galls.; also pump. Hambridge, Highworth, Wilts.

Tanner's "Practice of Medicine" (Broadbent's), latest edition, good condition. Price to Walker, Chemist, Dewsbury.

100 ozs. morphia, best makers; cash, lowest quotations. Broker, 11 Old Post-office Place, Liverpool.

Dental forceps, old teeth in dental metal, old gold, silver; full value given. Dentist, 11 Old Post-office Place, Liverpool.

Four show globes, plain or cut stoppers, 6 galls. each; four specie jars and stands, height 24 inches. Sharp, Chemist, Sunderland.

Barrow Evan's hair restorer and Scott's cigarettes, 1*s.*; cheap. J. Thompson, 31 Hanover Street, Liverpool.

## ADDRESS WANTED.

James Murray, Esq., son of Sir John Murray Lenty & Co., Kensington, W.

Mrs. Higgs, tall, wears spectacles. Lenty & Co., Kensington, W.

The present address of Mr. Rivers Wilson, or of Mr. Edmund A. Lewis, both formerly of the South-Western College of Pharmacy. 211/48.

The present address of J. Miller & Co., formerly pickle manufacturers, of 177 Holm Street, Glasgow. 211/49.

Address of G. E. Morphett, tutor; supposed in West End, London. Wing, Chemist, Chislehurst.

THE official report of the national trade for the month of August is not encouraging to those who hoped that the Congress of Berlin was to bring about an immediate revival of trade. The returns show a decline of about 2½ per cent. in value when August of 1878 is compared with August of 1877. The foreign demand for most classes of goods of English manufacture is still very apathetic, and there seem but few indications of an improvement of value.

Last month there was a decided approach to activity in the market for heavy chemicals. This induced a too eager increase of output. A reaction followed, and prices are now weaker than ever. The changes of quotation are not noticeable, but the difficulty is that these quotations are not definite. For the past year and more large buyers have been able almost to fix their own prices within reasonable limits. This is the case now, as makers who have increased their manufacturing facilities are seeking above all for an outlet for their products in the hope that another month or two will bring the long-looked-for definite improvement. Citric acid has been fairly steady through the month, but there is a fractional decline from the recent advance. Borax is 1*s.* per cwt dearer, and may go much higher, as the California producers have combined to limit their turn-out until prices get more to their liking. Camphor keeps firm. Refiners' prices are still 1*s.* 4½*d.* Bromide of potassium is sold at 2*s.* 2*d.*, and iodide at 15*s.* to 15*s.* 6*d.* Quinine has been firmly held, and at one time it was thought to be again advancing towards fancy prices. The rivers in Columbia had run dry, it was said—struck work perhaps. They have apparently started again, for at latest bark sales there was but a languid demand, and good foreign quinine can be bought in London to-day at less than 11*s.* Cream of tartar is dull, but recent advanced rates are still quoted. Iodine is unchanged at 1*s.* per ounce, and mercury at 7*l.* per bottle.

The drug markets have been very well supported by buyers generally, but no marked features have presented themselves. Opium has sold at occasionally higher prices, and morphia makers have anticipated a rise; but there does not seem sufficient reason to look for any great advance. Otto of roses, notwithstanding the war in the Balkan provinces, will probably be in abundant supply next year, and prices may be expected to fall still lower than their present level. English oil of lavender turns out very small in quantity this year. American oil of peppermint is quoted rather lower. Lemon and bergamot are rather easier in Italy, where makers have been holding in the hope of getting a rise, but are now to some extent yielding. At the last drug sales Belgian camomiles were held at 70*s.*; Maranham copaiba was 1*s* 5*d.* to 1*s.* 5½*d.*; Para, 1*s.* 3½*d.* to 1*s.* 4½*d.*; ambergris was held at 65*s.* to 80*s.*; bergamot, 11*s.*, lemon, 4*s.* 6*d.*; cuttle-fish sold at 1½*d.* to 2*d.*; ergot of rye, some sold at 6¾*d.*; another lot held at 9½*d.* Jamaica honey made for middling to good fair yellow, 38*s.* to 43*s.* Fine pale Irish moss went at 36*s.*; ipecacuanha made 4*s.* 6*d.* to 4*s.* 8*d.* for good; Jaborandi leaves were bought in at 1*s.*; cocoa at 1*s.* 3*d.*; patchouli sold at 5*d.*, and some common matico realised ½*d.* per lb. Holders of Norwegian cod liver oil desired an advance of 6*d.*, but for the present this was not forthcoming. Senna was sold at 10*d.* to 1*s.* 7*d.* for Alexandrian of fair quality, and Tinnevelly made 4*d.* to 7½*d.*

The latest bark sales were held on Tuesday last, when there was considerably less demand, and 1,980 packages soft Colombia, New Granada, &c., were mostly withdrawn or bought in, barely 200 packages finding buyers: common at 1*s.* 9*d.*; middling, 2*s.* 6*d.* to 2*s.* 10*d.*; and good and fine, 3*s.* 5*d.* to 3*s.* 9*d.* Of 393 packages Calisaya 30 bales sold before the sales. 321 bales Carthagena all sold: common at 2*s.* 8*d.* to 2*s.* 9*d.*; medium to good, 2*s.* 11*d.* to 3*s.* 10*d.*; fine, 4*s.* to 4*s.* 1*d.* 272 bales hard Pitayo partly sold at 2*s.* 10*d.* East India cinchona met a fair demand, and of a total of 263 packages nearly the whole found buyers, as follows:—Ceylon, siftings, at 1*s.* 5*d.* to 2*s.* 8*d.*; twigs, 1*s.* 4*d.* to 1*s.* 10*d.*; chips, mixed with broken branch, &c., common, 1*s.* 6*d.* to 1*s.* 8*d.*; good and fine, 2*s.* 9*d.* to 3*s.* 7*d.* Quill, common broken, at 1*s.* 6*d.* to 2*s.*; middling, 2*s.* 4*d.*; good, 3*s.* 6*d.*; fine mossy crown sort, 5*s.* 3*d.*; flat, 2*s.* 6*d.*; root sort, 2*s.* 8*d.* Cochin and undescribed sort, dusty, mixed, and broken, 1*s.* 7*d.* to 1*s.* 11*d.*; broken quill, 2*s.* 2*d.*; good clean ditto, 2*s.* 7*d.* to 3*s.* 7*d.* 5 bales Government-grown West India sold, rather mixed quill, at 2*s.* 10*d.* per lb.

Canaryseed, as the result of some speculative operations, exhibits a decided rise; in order that further impetus might be given to this upward movement, the recent heavy arrivals have been carefully kept off the market; it should, however, be added that the consumptive demand shows no real improvement, therefore the late advance is purely artificial, and whether it can be maintained remains to be seen.

In the oil market linseed is easier, and seems on the decline. Cocoanut has again advanced very considerably. Olive oil still keeps dull, turning in favour of buyers. Sperm and whale oils are slightly cheaper. The stock of petroleum officially recorded in London is over 45,000 barrels in excess of last year, and 67,000 above 1876. There are also said to be larger quantities afloat from New York than at the beginning of last winter. The price has remained singularly steady during the year, and at this time, when a little advance is generally looked for, the lowest quotation of the year has been touched, transactions having taken place at a trifle under 8½*d.* Up to last May forward contracts for September-December delivery were made at 10*d.* to 11*d.*

| | Aug. 31 Stocks | | Aug. 31 Imports | | Aug. 31 Deliveries | |
|---|---|---|---|---|---|---|
| | 1878 | 1877 | 1878 | 1877 | 1878 | 1877 |
| Aloes....................cs | 1,752 | 1,788 | 1,848 | 1,206 | 2,137 | 1,782 |
| ,, ...............kegs | 14 | 21 | 1 | — | 1 | 4 |
| ,, ..............gourds | 784 | 2,773 | 79 | 2,690 | 1,604 | 1,576 |
| Aniseed, Star ......chts | 968 | 1,321 | 758 | 263 | 741 | 672 |
| Arrowroot ..........cks | 17,964 | 14,939 | 13,678 | 13,717 | 9,024 | 8,584 |
| ,, ......bxs & tins | 8,501 | 7,557 | 7,561 | 8,184 | 5,634 | 4,811 |
| Balsam ..........cks, &c. | 133 | 464 | 125 | 435 | 180 | 327 |
| Bark, Medicinal ..cks, &c. | 880 | 1,060 | 1,663 | 2,572 | 1,952 | 1,662 |
| ,, ..........srns, &c. | 8,754 | 9,862 | 27,577 | 17,144 | 29,623 | 15,958 |
| Borax ..............pkgs | 1,431 | 1,126 | 632 | 459 | 234 | 684 |
| Bees' Wax......bls & srns | 368 | 374 | 252 | 115 | 438 | 155 |
| ,, ......cks & cs | 1,458 | 1,216 | 1,263 | 1,670 | 1,176 | 1,424 |
| ,, ........cakes | 323 | 83 | 456 | 138 | 141 | 174 |
| Wax Japan vegetable pkgs | 5,198 | 8,165 | 757 | 5,107 | 1,873 | 4,473 |
| Camphor............pkgs | 1,918 | 6,873 | 4,244 | 5,194 | 6,831 | 4,728 |
| Cardamoms..........chts | 306 | 751 | 213 | 447 | 478 | 527 |
| Cocculus Indicus bgs, &c. | 1,795 | 2,519 | — | 457 | 641 | 327 |
| Colombo root........pkgs | 565 | 919 | 142 | 375 | 194 | 172 |
| Cream of Tartar ......cks | 98 | 110 | 260 | 205 | 214 | 188 |
| Cubebs ..............bgs | 184 | 264 | 30 | 30 | 140 | 46 |
| Dragonsblood........chts | 87 | 109 | 89 | 144 | 140 | 95 |
| Galls, E.I. ......cks & cs | 7,847 | 5,322 | 8,709 | 7,188 | 4,104 | 3,347 |
| Mediterranean ......sks | 1,146 | 738 | 1,453 | 1,087 | 921 | 806 |
| Gum— | | | | | | |
| Ammoniac ........pkgs | 538 | 523 | 102 | 184 | 49 | 149 |
| Animi Copal .... ,, | 7,509 | 8,054 | 3,875 | 8,456 | 4,506 | 5,223 |
| Arabic, Barbary .... ,, | 1,003 | 715 | 1,285 | 1,513 | 1,303 | 1,804 |
| Turkey .......... ,, | 438 | 387 | 1,023 | 946 | 1,054 | 841 |
| E.I................ ,, | 2,313 | 1,798 | 3,852 | 2,167 | 3,711 | 1,985 |
| Assafœtida ........ ,, | 332 | 461 | 286 | 467 | 256 | 358 |
| Benjamin .......... ,, | 822 | 1,117 | 940 | 1,450 | 1,082 | 930 |
| Damar ............ ,, | 1,060 | 745 | 1,850 | 763 | 1,883 | 2,171 |
| Galbanum.......... ,, | 25 | 37 | — | 15 | 10 | 10 |
| Gambogo .......... ,, | 178 | 172 | 275 | 200 | 263 | 237 |
| Guaiacum ........ ,, | 27 | 29 | 134 | 131 | 143 | 111 |
| Kino .............. ,, | 13 | 16 | 10 | 5 | 9 | 7 |
| Kowrie ............tns | 833 | 1,164 | 938 | 1,396 | 1,104 | 1,041 |
| Mastic ..........pkgs | 179 | 112 | 95 | 24 | 40 | 22 |
| Myrrh, E.I. ........ ,, | 301 | 319 | 186 | 375 | 150 | 311 |
| Olibanum .......... ,, | 1,912 | 4,539 | 6,314 | 7,916 | 7,359 | 4,826 |
| Sandarac .......... ,, | 1,072 | 337 | 1,682 | 970 | 1,088 | 1,149 |
| Senegal ............tns | 20 | 13 | 14 | 2 | 4 | 7 |
| Tragacanth ......pkgs | 1,283 | 318 | 2,043 | 682 | 957 | 425 |
| Ipecacuanha....cks & bgs | 204 | 234 | 383 | 340 | 491 | 269 |
| Jalap ................bls | 455 | 599 | 128 | 262 | 210 | 313 |
| Nux Vomica ........pkgs | 4,580 | 1,735 | 5,792 | 1,117 | 2,469 | 891 |
| Oil— | | | | | | |
| Castor ............cks | — | — | — | 4 | 7 | 4 |
| ,, ............cs | 2,912 | 6,722 | 10,519 | 12,232 | 11,094 | 13,505 |
| Palm ..............tns | 1,021 | 189 | 1,681 | 1,358 | 1,267 | 1,676 |
| Cocoanut .......... ,, | 1,398 | 3,782 | 3,521 | 7,813 | 4,991 | 6,870 |
| Olive ..........cks, &c. | 740 | 2,128 | 2,160 | 5,060 | 2,739 | 3,396 |
| Aniseed ............cs | 193 | 252 | 461 | 345 | 486 | 312 |
| Cassia ................ ,, | 583 | 773 | 7 | 553 | 142 | 182 |
| Opium ........chts, &c. | 1,149 | 783 | — | — | — | — |
| Rhubarb ............chts | 1,339 | 1,120 | 1,415 | 1,246 | 1,094 | 1,074 |
| Sarsaparilla ..........bls | 967 | 1,266 | 1,459 | 2,017 | 1,717 | 1,666 |
| Senna ..........bls, &c. | 1,851 | 2,933 | 747 | 2,933 | 2,136 | 2,531 |
| Shellac..............cs, &c. | 44,541 | 35,763 | 27,539 | 30,855 | 22,670 | 21,991 |
| Terra Japuca, Gambier tns | 3,815 | 1,947 | 10,733 | 6,054 | 8,704 | 4,969 |
| Cutch .............. ,, | 3,683 | 2,787 | 3,131 | 1,984 | 1,782 | 1,915 |
| Turmeric .............. ,, | 975 | 833 | 1,994 | 1,416 | 2,089 | 1,199 |

# Monthly Price Current.

prices quoted in the following list are those actually obtained in incing Lane for articles sold in bulk. Our Retail Subscribers must ot expect to purchase at these market prices, but they may draw from hem useful conclusions respecting the prices at which articles are ffered by the Wholesale Firms.

| EMICALS. | 1878. | | | | | 1877. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | s. | d. | | s. | d. | s. | d. | | s. | d. |
| CIDS— | | | | | | | | | | |
| Acetic ..........per lb. | 0 | 2¾ | to | 0 | 0 | 0 | 2¾ | to | 0 | 0 |
| Citric .......... ,, | 2 | 4½ | .. | 0 | 0 | 2 | 5½ | .. | 2 | 6 |
| Hydrochlor......per cwt. | 5 | 0 | .. | 7 | 0 | 4 | 0 | .. | 7 | 0 |
| Nitric ..........per lb. | 0 | 4¼ | .. | 0 | 0 | 0 | 4¾ | .. | 0 | 0 |
| Oxalic .......... ,, | 0 | 4¼ | .. | 0 | 0 | 0 | 5 | .. | 0 | 0 |
| Sulphuric ...... ,, | 0 | 0¾ | .. | 0 | 1 | 0 | 0¾ | .. | 0 | 1 |
| Tartaric crystal.. ,, | 1 | 5½ | .. | 0 | 0 | 1 | 5 | .. | 0 | 0 |
| powdered ,, | 1 | 5½ | .. | 0 | 0 | 1 | 5 | .. | 0 | 0 |
| NTIMONY ore ......per ton | 240 | 0 | .. | 300 | 0 | 240 | 0 | .. | 300 | 0 |
| crude .. per cwt. | 37 | 0 | .. | 0 | 0 | 37 | 0 | .. | 0 | 0 |
| star...... ,, | 49 | 0 | .. | 51 | 0 | 48 | 0 | .. | 0 | 0 |
| RSENIC, lump...... ,, | 26 | 0 | .. | 0 | 0 | 26 | 6 | .. | 0 | 0 |
| powder.... ,, | 8 | 0 | .. | 9 | 0 | 8 | 3 | .. | 0 | 0 |
| RIMSTONE, rough ...per ton | 110 | 0 | .. | 115 | 0 | 105 | 0 | .. | 110 | 0 |
| roll .. per cwt. | 8 | 9 | .. | 9 | 0 | 9 | 6 | .. | 10 | 0 |
| flour.... ,, | 11 | 0 | .. | 13 | 0 | 11 | 6 | .. | 13 | 6 |
| DINE, dry ........per oz. | 1 | 0 | .. | 0 | 0 | 0 | 9¼ | .. | 0 | 0 |
| ORY BLACK, dry .. per cwt. | 8 | 6 | .. | 0 | 0 | 8 | 6 | .. | 0 | 0 |
| AGNESIA, calcined..per lb. | 1 | 10 | .. | 0 | 0 | 1 | 10 | .. | 0 | 0 |
| ERCURY ........per bottle | 140 | 0 | .. | 0 | 0 | 155 | 0 | .. | 0 | 0 |
| INIUM, red ...... per cwt. | 18 | 6 | .. | 19 | 0 | 22 | 6 | .. | 0 | 0 |
| orange .. ,, | 29 | 6 | .. | 0 | 0 | 33 | 0 | .. | 0 | 0 |
| RECIPITATE, red . per lb. | 3 | 5 | .. | 0 | 0 | 4 | 0 | .. | 0 | 0 |
| white ,, | 3 | 4 | .. | 0 | 0 | 3 | 11 | .. | 0 | 0 |
| RUSSIAN BLUE .. ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| ALTS— | | | | | | | | | | |
| Alum ............per ton | 125 | 0 | .. | 0 | 0 | 140 | 0 | .. | 147 | 6 |
| powder...... ,, | 145 | 0 | .. | 0 | 0 | 155 | 0 | .. | 157 | 6 |
| Ammonia: | | | | | | | | | | |
| Carbonate...... per lb. | 0 | 6½ | .. | 0 | 6¾ | 0 | 5 | .. | 0 | 5¾ |
| Hydrochlorate, crude, white ........ per ton | 600 | 0 | .. | 720 | 0 | 560 | 0 | .. | 720 | 0 |
| British (*see* Sal Am.) | | | | | | | | | | |
| Sulphate........ per ton | 410 | 0 | .. | 420 | 0 | 430 | 0 | .. | 440 | 0 |
| Argol, Cape ......per cwt. | 75 | 0 | .. | 82 | 0 | 75 | 0 | .. | 87 | 6 |
| Red........ ,, | 52 | 0 | .. | 70 | 0 | 67 | 0 | .. | 73 | 0 |
| Oporto, red. ,, | 32 | 6 | .. | 33 | 0 | 33 | 0 | .. | 34 | 0 |
| Sicily .. ,, ,, | 60 | 0 | .. | 65 | 0 | 0 | 0 | .. | 0 | 0 |
| Ashes (*see* Potash and Soda) | | | | | | | | | | |
| Bleaching powd...per cwt. | 6 | 0 | .. | 6 | 3 | 6 | 3 | .. | 0 | 0 |
| Borax, crude...... ,, | 27 | 0 | .. | 30 | 0 | 27 | 0 | .. | 38 | 0 |
| British refnd. ,, | 35 | 0 | .. | 37 | 6 | 40 | 0 | .. | 0 | 0 |
| Calomel ..........per lb. | 3 | 0 | .. | 0 | 0 | 3 | 7 | .. | 0 | 0 |
| Copper: | | | | | | | | | | |
| Sulphate ....per cwt. | 18 | 3 | .. | 0 | 0 | 21 | 0 | .. | 21 | 6 |
| Copperas, green..per ton | 50 | 0 | .. | 55 | 0 | 55 | 0 | .. | 0 | 0 |
| Corrosive Sublimate p. lb. | 2 | 5 | .. | 0 | 0 | 3 | 0 | .. | 0 | 0 |
| Cr. Tartar, French, p. cwt. | 107 | 0 | .. | 107 | 6 | 100 | 0 | .. | 0 | 0 |
| brown ,, | 80 | 0 | .. | 0 | 0 | 90 | 0 | .. | 0 | 0 |
| Epsom Salts ....per cwt. | 4 | 3 | .. | 6 | 0 | 4 | 3 | .. | 5 | 3 |
| Glauber Salts .... ,, | 3 | 0 | .. | 4 | 6 | 3 | 6 | .. | 4 | 6 |
| Lime: | | | | | | | | | | |
| Acetate, white, per cwt. | 11 | 0 | .. | 20 | 0 | 11 | 0 | .. | 20 | 0 |
| Magnesia: Carbonate ,, | 47 | 6 | .. | 0 | 0 | 47 | 6 | .. | 0 | 0 |
| Potash: | | | | | | | | | | |
| Bichromate ....per lb. | 0 | 5 | .. | 0 | 0 | 0 | 3¾ | .. | 0 | 4 |
| Carbonate: | | | | | | | | | | |
| Potashes, Canada, 1st sort ......per cwt. | 22 | 0 | .. | 22 | 6 | 24 | 0 | .. | | 0 |
| Pearlashes, Canada, 1st sort ......per cwt. | 31 | 6 | .. | 32 | 0 | 33 | 0 | .. | 0 | 0 |
| Chlorate ......per lb. | 0 | 7⅛ | .. | 0 | 7¼ | 0 | 8¼ | .. | 0 | 0 |
| Prussiate ........ ,, | 0 | 11 | .. | 0 | 11½ | 0 | 10¼ | .. | 0 | 11½ |
| red .... ,, | 1 | 7½ | .. | 1 | 8 | 0 | 0 | .. | 0 | 0 |
| Tartrate (*see* Argol and Cream of Tartar) | | | | | | | | | | |
| Potassium: | | | | | | | | | | |
| Bromide ............ | 2 | 6 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| Chloride......per cwt. | 6 | 6 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| Iodide ........per lb. | 15 | 0 | .. | 0 | 0 | 12 | 0 | .. | 12 | 6 |
| Quinine: | | | | | | | | | | |
| Sulphate, British, in bottles ......per oz. | 12 | 6 | .. | 0 | 0 | 12 | 0 | .. | 12 | 6 |
| Sulphate, French ,, | 12 | 3 | .. | 0 | 0 | 12 | 0 | .. | 0 | 0 |
| Sal Acetos ......per lb. | 0 | 6½ | .. | 0 | 6¾ | 0 | 7 | .. | 0 | 7¼ |
| Sal Ammoniac, Brit. cwt. | 44 | 0 | .. | 45 | 0 | 44 | 0 | .. | 45 | 0 |
| Saltpetre: | | | | | | | | | | |
| Bengal, 6 per cent. or under ......per cwt. | 19 | 3 | .. | 19 | 6 | 21 | 9 | .. | 22 | 6 |
| Bengal, over 6 per cent. per cwt. | 18 | 0 | .. | 19 | 0 | 21 | 0 | .. | 21 | 6 |
| British. refined ,, | 24 | 0 | .. | 25 | 0 | 25 | 6 | .. | 26 | 9 |
| Soda: Bicarbonate, p. cwt. | 10 | 0 | .. | 0 | 0 | 10 | 9 | .. | 0 | 0 |
| Carbonate: | | | | | | | | | | |
| Soda Ash ..per deg. | 0 | 1⅝ | .. | 0 | 0 | 0 | 1¾ | .. | 0 | 1⅞ |
| Soda Crystals per ton | 72 | 6 | .. | 77 | 6 | 80 | 0 | .. | 0 | 0 |
| Hyposulphite, per cwt. | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| Nitrate ...... ,, | 15 | 3 | .. | 15 | 6 | 14 | 6 | .. | 15 | 0 |
| UGAR OF LEAD, White cwt. | 37 | 0 | .. | 0 | 0 | 37 | 0 | .. | 0 | 0 |
| Brown, cwt. | 26 | 6 | .. | 0 | 0 | 26 | 6 | .. | 0 | 0 |
| ULPHUR (*see* Brimstone) | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| | s. | d. | | s. | d. | s. | d. | | s. | d. |
| VERDIGRIS ......... per lb. | 1 | 1 | to | 1 | 5 | 1 | 1 | to | 1 | 5 |
| VERMILION, English ,, | 2 | 8 | .. | 0 | 0 | 3 | 3 | .. | 0 | 0 |
| China ,, | 2 | 6 | .. | 0 | 0 | 2 | 9 | .. | 0 | 0 |
| **DRUGS.** | | | | | | | | | | |
| ALOES, Hepatic ....per cwt. | 80 | 0 | .. | 160 | 0 | 70 | 0 | .. | 180 | 0 |
| Socotrine .. ,, | 90 | 0 | .. | 200 | 0 | 85 | 0 | .. | 220 | 0 |
| Cape, good.. ,, | 40 | 0 | .. | 50 | 0 | 56 | 0 | .. | 57 | 6 |
| Inferior .... ,, | 44 | 0 | .. | 48 | 6 | 44 | 0 | .. | 55 | 6 |
| Barbadoes .. ,, | 65 | 0 | .. | 145 | 0 | 50 | 0 | .. | 210 | 0 |
| AMBERGRIS, grey........oz. | 0 | 0 | .. | 0 | 0 | 74 | 6 | .. | 83 | 0 |
| BALSAM— | | | | | | | | | | |
| Canada............per lb. | 0 | 0 | .. | 0 | 0 | 1 | 1 | .. | 0 | 0 |
| Capivi ............ ,, | 1 | 4 | .. | 1 | 6 | 1 | 5 | .. | 1 | 6 |
| Peru .............. ,, | 1 | 9 | .. | 2 | 1 | 5 | 0 | .. | 0 | 0 |
| Tolu .............. ,, | 3 | 6 | .. | 3 | 9 | 6 | 0 | .. | 6 | 6 |
| BARKS— | | | | | | | | | | |
| Canella alba......per cwt. | 18 | 0 | .. | 19 | 0 | 21 | 0 | .. | 28 | 6 |
| Cascarilla ........ ,, | 17 | 0 | .. | 23 | 0 | 15 | 0 | .. | 20 | 0 |
| Peru, crown & grey per lb. | 1 | 9 | .. | 3 | 2 | 1 | 6 | .. | 2 | 9 |
| Calisaya, flat ,, | 2 | 0 | .. | 4 | 6 | 1 | 3 | .. | 5 | 0 |
| ,, quill ,, | 4 | 0 | .. | 7 | 0 | 2 | 0 | .. | 7 | 0 |
| Carthagena ,, | 2 | 4 | .. | 4 | 11 | 0 | 9 | .. | 5 | 11 |
| Columbian .. ,, | 2 | 0 | .. | 6 | 0 | 1 | 9 | .. | 6 | 2 |
| E. I. ........ ,, | 1 | 6 | .. | 3 | 6 | 1 | 4 | .. | 3 | 6 |
| ,, good & fine ,, | 4 | 0 | .. | 9 | 0 | 4 | 0 | .. | 6 | 6 |
| Pitayo ...... ,, | 0 | 6 | .. | 2 | 6 | 0 | 6 | .. | 1 | 6 |
| Red ........ ,, | 3 | 0 | .. | 8 | 0 | 2 | 3 | .. | 5 | 0 |
| Buchu Leaves........ ,, | 0 | 2½ | .. | 1 | 3 | 0 | 2½ | .. | 1 | 6 |
| CAMPHOR, China ..per cwt. | 85 | 0 | .. | 87 | 6 | 92 | 6 | .. | 95 | 0 |
| Japan .. ,, | 90 | 0 | .. | 92 | 6 | 97 | 6 | .. | 100 | 0 |
| Refin. Eng. per lb. | 1 | 4½ | .. | 0 | 0 | 1 | 3 | .. | 0 | 0 |
| CANTHARIDES........ ,, | 1 | 8 | .. | 4 | 0 | 1 | 11 | .. | 5 | 3 |
| CHAMOMILE FLOWERS p. cwt. | 60 | 0 | .. | 80 | 0 | 50 | 0 | .. | 200 | 0 |
| CASTOREUM ........per lb. | 0 | 0 | .. | 0 | 0 | 9 | 0 | .. | 30 | 0 |
| DRAGON'S BLOOD, lp. p. cwt. | 80 | 0 | .. | 200 | 0 | 95 | 0 | .. | 260 | 0 |
| FRUITS AND SEEDS (*see also* Seeds *and* Spices). | | | | | | | | | | |
| Anise, China Star per cwt. | 80 | 0 | .. | 90 | 0 | 92 | 0 | .. | 100 | 0 |
| Spanish, &c. ,, | 28 | 0 | .. | 30 | 0 | 30 | 0 | .. | 35 | 0 |
| Beans, Tonquin....per lb. | 3 | 3 | .. | 5 | 4 | 1 | 9 | .. | 2 | 7 |
| Cardamoms, Malabar good ............ ,, | 6 | 0 | .. | 6 | 6 | 5 | 0 | .. | 5 | 11 |
| inferior.... ,, | 2 | 0 | .. | 5 | 10 | 1 | 6 | .. | 4 | 5 |
| Aleppy .... ,, | 2 | 0 | .. | 6 | 8 | 3 | 2 | .. | 5 | 0 |
| Madras.... ,, | 2 | 8 | .. | 4 | 6 | 2 | 2 | .. | 3 | 10 |
| Ceylon .... ,, | 3 | 0 | .. | 4 | 3 | 3 | 6 | .. | 5 | 0 |
| Cassia Fistula....per cwt. | 0 | 0 | .. | 0 | 0 | 10 | 0 | .. | 32 | 0 |
| Castor Seeds .... ,, | 0 | 0 | .. | 0 | 0 | 0 | 1 | .. | 0 | 2½ |
| Cocculus Indicus ,, | 8 | 0 | .. | 10 | 0 | 8 | 3 | .. | 11 | 0 |
| Colocynth, apple ..per lb. | 1 | 0 | .. | 1 | 9 | 0 | 0 | .. | 0 | 0 |
| Croton Seeds ....per cwt. | 32 | 0 | .. | 33 | 0 | 30 | 0 | .. | 0 | 0 |
| Cubebs.......... ,, | 0 | 0 | .. | 0 | 0 | 27 | 0 | .. | 27 | 6 |
| Cummin ........ ,, | 20 | 0 | .. | 35 | 0 | 10 | 0 | .. | 20 | 0 |
| Dividivi ........ ,, | 11 | 0 | .. | 16 | 0 | 12 | 6 | .. | 17 | 6 |
| Fenugreek ...... ,, | 0 | 0 | .. | 0 | 0 | 8 | 0 | .. | 11 | 0 |
| Guinea Grains .. ,, | 28 | 6 | .. | 30 | 0 | 0 | 0 | .. | 0 | 0 |
| Juniper Berries ,, | 3 | 3 | .. | 6 | 0 | 8 | 0 | .. | 10 | 0 |
| Nux Vomica.. .. ,, | 6 | 0 | .. | 10 | 6 | 12 | 0 | .. | 14 | 6 |
| Tamarinds, East India ,, | 12 | 0 | .. | 19 | 0 | 11 | 0 | .. | 18 | 0 |
| West India ,, | 20 | 0 | .. | 25 | 0 | 20 | 0 | .. | 25 | 0 |
| Vanilla, large .... per lb. | 17 | 0 | .. | 23 | 0 | 20 | 0 | .. | 28 | 0 |
| inferior ,, | 12 | 0 | .. | 16 | 6 | 12 | 0 | .. | 18 | 0 |
| GINGER, Preserved, per lb. | 0 | 5¼ | .. | 0 | 6 | 0 | 4½ | .. | 0 | 7 |
| HONEY, Chili .... per cwt. | 27 | 0 | .. | 35 | 0 | 32 | 0 | .. | 41 | 0 |
| Jamaica ,, | 36 | 0 | .. | 45 | 0 | 33 | 0 | .. | 46 | 0 |
| Australian ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| IPECACUANHA .... per lb. | 4 | 1 | .. | 4 | 9 | 0 | 0 | .. | 0 | 0 |
| ISINGLASS, Brazil.. ,, | 2 | 6 | .. | 5 | 6 | 2 | 10 | .. | 4 | 11 |
| Tongue sort ,, | 3 | 6 | .. | 5 | 7 | 3 | 6 | .. | 5 | 4 |
| East India ,, | 1 | 4 | .. | 4 | 10 | 2 | 2 | .. | 5 | 6 |
| West India ,, | 3 | 8 | .. | 4 | 6 | 4 | 0 | .. | 4 | 10 |
| Russ. long staple | 6 | 0 | .. | 14 | 0 | 8 | 0 | .. | 15 | 0 |
| ,, inferior | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| ,, Simovia | 1 | 6 | .. | 3 | 0 | 2 | 2 | .. | 3 | 3 |
| JALAP, good...... ,, | 0 | 10 | .. | 0 | 11 | 0 | 8 | .. | 0 | 10 |
| infer. & stems ,, | 0 | 8 | .. | 0 | 9 | 0 | 7 | .. | 0 | 7½ |
| LEMON JUICE .... per degree | 0 | 0⅞ | .. | 0 | 1¼ | 0 | 1¼ | .. | 0 | 1½ |
| LIME JUICE........per gall. | 1 | 7 | .. | 1 | 9 | 0 | 0 | .. | 0 | 0 |
| LIQUORICE, Spanish per cwt. | 0 | 0 | .. | 0 | 0 | 34 | 0 | .. | 39 | 0 |
| Liquorice Root ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| MANNA, flaky ......per lb. | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| small ...... ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| MUSK, Pod..........per oz. | 25 | 6 | .. | 60 | 6 | 13 | 6 | .. | 48 | 6 |
| Grain........ ,, | 0 | 0 | .. | 0 | 0 | 40 | 0 | .. | 50 | 0 |
| OILS (*see also separate list*) | | | | | | | | | | |
| Almond, expressed per lb. | 1 | 10 | .. | 0 | 0 | 1 | 4 | .. | 0 | 0 |
| Castor, 1st pale.... ,, | 0 | 5⅛ | .. | 0 | 5¼ | 0 | 4½ | .. | 0 | 5 |
| second .... ,, | 0 | 4⅞ | .. | 0 | 5 | 0 | 4¼ | .. | 0 | 4⅜ |
| Cod Liver ...... per gall. | 2 | 9 | .. | 5 | 6 | 3 | 11 | .. | 6 | 6 |
| Croton .......... per oz. | 0 | 2½ | .. | 0 | 2¾ | 0 | 2½ | .. | 0 | 2¾ |
| Essential Oils: | | | | | | | | | | |
| Almond ........per lb. | 25 | 0 | .. | 0 | 0 | 20 | 0 | .. | 0 | 0 |
| Anise-seed ...... ,, | 6 | 9 | .. | 0 | 0 | 6 | 6 | .. | 0 | 0 |
| Bay ..........per cwt. | 0 | 0 | .. | 0 | 0 | 65 | 0 | .. | 70 | 0 |
| Bergamot ...... per lb. | 0 | 0 | .. | 0 | 0 | 10 | 0 | .. | 15 | 0 |
| Cajeput......per bottle | 0 | 0 | .. | 0 | 0 | 3 | 0 | .. | 3 | 6 |
| Caraway........per lb. | 0 | 0 | .. | 0 | 0 | 9 | 0 | .. | 9 | 3 |
| Cassia .......... ,, | 2 | 9 | .. | 1 | 10 | 3 | 6 | .. | 0 | 0 |
| Cinnamon ......per oz. | 4 | 0 | .. | 5 | 6 | 2 | 6 | .. | 6 | 0 |
| Cinnamon-leaf .. ,, | 0 | 1¾ | .. | 0 | 1⅞ | 0 | 1¾ | .. | 0 | 2 |
| Citronelle ...... ,, | 0 | 2 | .. | 0 | 2¼ | 0 | 1¾ | .. | 0 | 0 |
| Clove .......... ,, | 8 | 6 | .. | 0 | 0 | 8 | 6 | .. | 0 | 0 |
| Juniper ........ ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| Lavender ......per lb. | 0 | 0 | .. | 0 | 0 | 1 | 8 | .. | 7 | 0 |
| Lemon .......... ,, | 4 | 0 | .. | 8 | 0 | 7 | 0 | .. | 9 | 6 |
| Lemongrass ....per oz. | 0 | 2¼ | .. | 0 | 0 | 0 | 2½ | .. | 0 | 2⅝ |

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|---|---|---|---|---|---|---|
| Essential Oils, *continued*:— | s. d. | | s. d. | s. d. | | s. d. |
| Neroli ..........per oz. | 3 0 | to | 6 0 | 3 0 | to | 6 6 |
| Nutmeg ........ ,, | 0 3 | .. | 0 4 | 0 4¾ | .. | 0 5 |
| Orange..........per lb. | 5 0 | .. | 7 0 | 6 0 | .. | 9 0 |
| Otto of Roses....per oz. | 22 0 | .. | 40 0 | 16 0 | .. | 42 0 |
| Patchouli ...... ,, | 1 6 | .. | 3 0 | 1 9 | .. | 3 0 |
| Peppermint : | | | | | | |
| American ....per lb. | 10 0 | .. | 12 6 | 13 0 | .. | 14 3 |
| English ...... ,, | 24 0 | .. | 25 0 | 34 0 | .. | 35 0 |
| Rosemary ...... ,, | 2 0 | .. | 2 0 | 2 0 | .. | 2 6 |
| Sassafras ...... ,, | 1 9 | .. | 2 0 | 2 3 | .. | 2 6 |
| Spearmint ...... ,, | 0 0 | .. | 0 0 | 12 0 | .. | 15 0 |
| Thyme.......... ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Mace, expressed ..per oz. | 0 6 | .. | 0 7 | 0 6 | .. | 0 10 |
| OPIUM, Turkey ......per lb. | 16 0 | .. | 17 0 | 21 0 | .. | 22 6 |
| inferior ...... ,, | 13 0 | .. | 15 6 | 10 0 | .. | 18 0 |
| QUASSIA (bitter wood) per ton | 100 0 | .. | 130 0 | 100 0 | .. | 130 0 |
| RHUBARB, China, good and fine ..............per lb. | 1 6 | .. | 4 0 | 3 0 | .. | 3 0 |
| Mid. to ord....... ,, | 0 9 | .. | 1 4 | 0 10 | .. | 2 6 |
| Dutch Trimmed.. ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| ROOTS—Calumba..per cwt. | 20 0 | .. | 40 0 | 28 0 | .. | 34 0 |
| China ............ ,, | 0 0 | .. | 0 0 | 30 0 | .. | 32 0 |
| Chiretta ..........per lb. | 0 0 | .. | 0 0 | 0 0 | .. | 6 6 |
| Galangal ........per cwt. | 22 6 | .. | 23 0 | 24 0 | .. | 26 0 |
| Gentian .......... ,, | 18 0 | .. | 20 0 | 20 0 | .. | 24 0 |
| Hellebore ........ ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Orris ............ ,, | 0 0 | .. | 0 0 | 26 0 | .. | 75 0 |
| Pellitory .......... ,, | 0 0 | .. | 0 0 | 70 0 | .. | 76 0 |
| Pink ..............per lb. | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Rhatany.......... ,, | 0 2 | .. | 0 5 | 0 3 | .. | 1 0 |
| Seneka............ ,, | 2 6 | .. | 2 10 | 3 6 | .. | 4 0 |
| Snake ............ ,, | 0 10 | .. | 1 0 | 0 6 | .. | 0 6½ |
| SAFFRON, Spanish .. ,, | 20 0 | .. | 40 0 | 33 0 | .. | 37 0 |
| SALEP ............ per cwt. | 240 0 | .. | 300 0 | 0 0 | .. | 0 0 |
| SARSAPARILLA, Lima per lb. | 0 5 | .. | 0 6 | 0 5 | .. | 0 7 |
| Guayaquil ........ ,, | 0 0 | .. | 0 0 | 1 10 | .. | 2 2 |
| Honduras ........ ,, | 0 11 | .. | 1 3 | 0 11 | .. | 1 4 |
| Jamaica .......... ,, | 1 4 | .. | 1 8 | 1 3 | .. | 2 9 |
| SASSAFRAS ........per cwt. | 9 0 | .. | 11 0 | 7 0 | .. | 11 0 |
| SCAMMONY, Virgin ..per lb. | 0 0 | .. | 0 0 | 24 0 | .. | 30 0 |
| second & ordinary ,, | 0 0 | .. | 0 0 | 6 0 | .. | 22 0 |
| SENNA, Bombay .... ,, | 0 0 | .. | 0 0 | 0 1 | .. | 0 4 |
| Tinnivelly ........ ,, | 0 1½ | .. | 1 3 | 0 1½ | .. | 1 6 |
| Alexandria........ ,, | 0 5 | .. | 1 6 | 0 5 | .. | 2 0 |
| SPERMACETI, refined ,, | 1 4 | .. | 0 0 | 1 3 | .. | 1 4 |
| American ........ ,, | 1 3 | .. | 0 0 | 1 0 | .. | 1 1 |
| SQUILLS ............ ,, | 0 3 | .. | 0 4 | 0 1½ | .. | 0 3½ |

## GUMS.

| | 1878. | | | 1877. | | |
|---|---|---|---|---|---|---|
| | £ s. | | £ s. | £ s. | | £ s. |
| AMMONIACI drop .. per cwt. | 1 18 | .. | 2 2 | 2 2 | .. | 2 0 |
| lump.. ,, | 0 15 | .. | 1 15 | 0 18 | .. | 1 14 |
| ANIMI, fine washed ,, | 13 10 | .. | 15 0 | 11 0 | .. | 12 15 |
| bold scraped ,, | 12 0 | .. | 13 10 | 9 15 | .. | 10 15 |
| sorts ...... ,, | 3 15 | .. | 11 10 | 6 15 | .. | 9 10 |
| dark ...... ,, | 3 10 | .. | 8 0 | 4 0 | .. | 6 12/6 |
| ARABIC, E.I., fine pale picked .. ,, | 2 15 | .. | 3 5 | 3 0 | .. | 3 17 |
| srts.,md.to fin. ,, | 2 2 | .. | 2 12/6 | 2 5 | .. | 2 14 |
| garblings .. ,, | 1 2 | .. | 2 0 | 1 6 | .. | 2 0 |
| TURKEY, pick.gd.to fin. ,, | 5 10 | .. | 9 0 | 6 0 | .. | 9 10 |
| second & inf. ,, | 3 5 | .. | 5 5 | 3 0 | .. | 5 15 |
| in sorts .. ,, | 2 0 | .. | 3 0 | 2 10 | .. | 3 16 |
| Gedda .... ,, | 1 10/6 | .. | 1 14 | 1 16 | .. | 3 8 |
| BARBARY, white .. ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| brown .. ,, | 1 10 | .. | 2 16 | 1 15 | .. | 1 19 |
| AUSTRALIAN...... ,, | 1 14 | .. | 2 9 | 1 17 | .. | 2 15 |
| ASSAFŒTIDA, cm.to fin ,, | 0 13 | .. | 2 10 | 0 16 | .. | 4 0 |
| BENJAMIN, 1st & 2nd ,, | 20 0 | .. | 70 0 | 0 0 | .. | 0 0 |
| Sumatra 1st & 2nd ,, | 6 10 | .. | 14 12/6 | 7 10 | .. | 11 5 |
| 3rd ,, | 2 5 | .. | 4 5 | 3 0 | .. | 5 0 |
| COPAL, Angola red ,, | 6 0 | .. | 6 15 | 6 0 | .. | 6 15 |
| Benguela ,, | 4 0 | .. | 5 0 | 4 0 | .. | 5 0 |
| | s. d. | | s. d. | s. d. | | s. d. |
| Sierra Leone, per lb. | 0 6½ | .. | 0 9 | 0 6½ | .. | 0 9 |
| Manilla....per cwt. | 16 6 | .. | 23 6 | 21 0 | .. | 27 0 |
| DAMMAR, pale .... ,, | 74 6 | .. | 75 0 | 66 0 | .. | 75 0 |
| Singapore .... ,, | 60 0 | .. | 70 0 | 65 6 | .. | 74 0 |
| EUPHORBIUM .... ,, | 9 6 | .. | 15 0 | 9 0 | .. | 15 0 |
| GALBANUM ........ per lb. | 0 3¼ | .. | 1 0 | 0 5 | .. | 1 3 |
| GAMBOGE, pckd.pipe per cwt. | 210 0 | .. | 212 6 | 190 0 | .. | 250 0 |
| GUAIACUM ..........per lb. | 1 0 | .. | 2 5 | 1 3 | .. | 2 6 |
| KINO..............per cwt. | 64 0 | .. | 80 0 | 40 0 | .. | 50 0 |
| KOWRIE, rough .. ,, | 37 0 | .. | 48 0 | 24 0 | .. | 39 0 |
| scraped sorts ,, | 49 0 | .. | 55 0 | 40 0 | .. | 55 0 |
| MASTIC, picked ....per lb. | 3 0 | .. | 3 8 | 4 0 | .. | 5 0 |
| MYRRH, gd. & fine per cwt. | 150 0 | .. | 200 0 | 152 6 | .. | 240 0 |
| ord. to fair.... ,, | 60 0 | .. | 147 6 | 80 0 | .. | 130 0 |
| OLIBANUM, p. drop ,, | 56 0 | .. | 60 0 | 47 0 | .. | 52 0 |
| amber & ylw. ,, | 40 0 | .. | 53 6 | 34 0 | .. | 46 0 |
| garblings.... ,, | 20 0 | .. | 31 0 | 10 0 | .. | 25 6 |
| SENEGAL ........ ,, | 62 6 | .. | 100 0 | 62 6 | .. | 65 0 |
| SANDARAC ........ ,, | 62 0 | .. | 90 0 | 79 0 | .. | 100 0 |
| SHELLAC, Orange.. ,, | 60 0 | .. | 87 0 | 85 0 | .. | 96 0 |
| Liver .. ,, | 61 0 | .. | 68 0 | 81 0 | .. | 89 0 |
| THUS ............ ,, | 20 0 | .. | 21 6 | 20 0 | .. | 21 6 |
| TRAGACANTH, leaf ,, | 240 0 | .. | 400 0 | 240 0 | .. | 400 0 |
| in sorts ,, | 65 0 | .. | 175 0 | 25 0 | .. | 175 0 |

## OILS.

| | 1878. | | | 1877. | | |
|---|---|---|---|---|---|---|
| | £ s. | | £ s. | £ s. | | £ s. |
| SEAL, pale ........per tun | 31 10 | .. | 32 0 | 33 0 | .. | 0 0 |
| yellow to tinged ,, | 28 0 | .. | 31 0 | 31 0 | .. | 32 0 |
| brown ...... ,, | 26 0 | .. | 27 0 | 29 0 | .. | 30 0 |
| SPERM............ ,, | 60 0 | .. | 0 0 | 80 0 | .. | 0 0 |
| BODY ............ ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| COD ............... ,, | 80 0 | .. | 0 0 | 35 10 | .. | 0 0 |

| | 1878. | | | 1877. | | |
|---|---|---|---|---|---|---|
| Oils, *continued*:— | £ s. | | £ s. | £ s. | | £ s. |
| WHALE, South Sea, pale, per tun | 30 0 | to | 0 0 | 35 10 | to | 36 0 |
| yellow ,, | 29 0 | .. | 0 0 | 33 0 | .. | 0 0 |
| brown ,, | 24 0 | .. | 28 0 | 31 0 | .. | 0 0 |
| East India, Fish ,, | 0 0 | .. | 0 0 | 25 10 | .. | 26 0 |
| OLIVE, Gallipoli....per ton | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Gioja........ ,, | 0 0 | .. | 0 0 | 50 0 | .. | 0 0 |
| Levant .... ,, | 48 10 | .. | 49 0 | 47 10 | .. | 48 0 |
| Mogador .... ,, | 0 0 | .. | 0 0 | 40 10 | .. | 0 0 |
| Spanish .... ,, | 49 0 | .. | 49 10 | 49 0 | .. | 50 0 |
| Sicily ...... ,, | 0 0 | .. | 0 0 | 49 10 | .. | 50 0 |
| COCOANUT, Cochin.. ,, | 66 0 | .. | 0 0 | 43 10 | .. | 44 0 |
| Ceylon ,, | 48 0 | .. | 49 10 | 38 10 | .. | 0 0 |
| Mauritius ,, | 47 0 | .. | 48 5 | 38 15 | .. | 0 0 |
| GROUND NUT AND GINGELLY: | | | | | | |
| Bombay ................ | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Madras ................ | 0 0 | .. | 0 0 | 45 0 | .. | 0 0 |
| PALM, fine................ | 37 10 | .. | 0 0 | 40 0 | .. | 0 0 |
| LINSEED .................. | 28 0 | .. | 0 0 | 30 10 | .. | 0 0 |
| RAPESEED, English, pale .. | 31 10 | .. | 31 12/6 | 41 0 | .. | 0 0 |
| brown ...... | 33 10 | .. | 33 12/6 | 39 0 | .. | 0 0 |
| Foreign, pale .. | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| brown ........ | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| COTTONSEED .............. | 31 0 | .. | 31 10 | 33 10 | .. | 35 5 |
| LARD .................... | 42 0 | .. | 44 0 | 51 0 | .. | 0 0 |
| TALLOW .................. | 30 0 | .. | 34 0 | 30 0 | .. | 54 0 |
| | s. d. | | s. d. | s. d. | | s. d. |
| TURPENTINE, American, cks. | 22 6 | .. | 0 0 | 26 6 | .. | 0 0 |
| French ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| PETROLEUM, Crude ........ | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| refined, per gall. | 0 8⅜ | .. | 0 0 | 0 10½ | .. | 0 1 |
| Spirit | 0 7½ | .. | 0 8 | 0 8½ | .. | 0 |

## SEEDS.

| | 1878. | | | 1877. | | |
|---|---|---|---|---|---|---|
| CANARY............per qr. | 48 0 | .. | 60 0 | 50 0 | .. | 57 6 |
| CARAWAY, English per cwt. | 0 0 | .. | 0 0 | 50 0 | .. | 56 0 |
| German, &c.... | 32 0 | .. | 36 0 | 48 0 | .. | 49 0 |
| CORIANDER .............. | 16 0 | .. | 21 0 | 22 0 | .. | 26 0 |
| HEMP..............per qr. | 35 0 | .. | 40 0 | 0 0 | .. | 0 0 |
| LINSEED English ,, | 60 0 | .. | 68 0 | 0 0 | .. | 0 0 |
| Black Sea & Azof | 50 0 | .. | 0 0 | 57 0 | .. | 0 0 |
| Calcutta ,, | 52 0 | .. | 52 6 | 54 0 | .. | 0 0 |
| Bombay ,, | 52 6 | .. | 53 0 | 58 0 | .. | 0 0 |
| St. Petrsbrg. ,, | 0 0 | .. | 0 0 | 53 0 | .. | 54 0 |
| Mustard, brown..per bshl. | 14 0 | .. | 17 0 | 12 0 | .. | 15 0 |
| white.. ,, | 10 0 | .. | 13 0 | 13 6 | .. | 16 0 |
| POPPY, East India, per qr. | 56 0 | .. | 0 0 | 57 6 | .. | 58 0 |

## SPICES.

| | 1878. | | | 1877. | | |
|---|---|---|---|---|---|---|
| CASSIA LIGNEA ..per cwt. | 42 0 | .. | 52 0 | 47 0 | .. | 60 0 |
| Vera .......... ,, | 22 0 | .. | 36 0 | 22 0 | .. | 45 0 |
| Buds .......... ,, | 56 0 | .. | 57 0 | 68 0 | .. | 70 0 |
| CINNAMON, Ceylon : | | | | | | |
| 1st quality ......per lb. | 1 8 | .. | 3 6 | 2 1 | .. | 3 8 |
| 2nd do. ........ ,, | 1 6 | .. | 2 6 | 1 10 | .. | 2 10 |
| 3rd do. ........ ,, | 1 5 | .. | 1 11 | 1 9 | .. | 2 5 |
| Tellicherry ...... ,, | 1 11 | .. | 2 5 | 2 0 | . | 2 10 |
| CLOVES, Penang .... ,, | 1 8 | .. | 1 11 | 2 0 | .. | 0 0 |
| Amboyna ........ ,, | 1 4 | .. | 1 6 | 1 4 | .. | 1 6 |
| Zanzibar.......... ,, | 1 2 | .. | 1 3 | 1 1 | .. | 1 2¾ |
| GINGER, Jam., fine per cwt. | 90 0 | .. | 202 6 | 91 0 | .. | 202 6 |
| Ord. to good .... ,, | 51 0 | .. | 80 0 | 48 0 | .. | 90 0 |
| African .......... ,, | 21 0 | .. | 23 0 | 28 0 | .. | 23 6 |
| Bengal............ ,, | 18 0 | .. | 18 6 | 20 6 | .. | 21 0 |
| Malabar .......... ,, | 0 0 | .. | 0 0 | 28 0 | .. | 30 0 |
| Cochin .......... ,, | 47 0 | .. | 125 0 | 50 0 | .. | 115 0 |
| PEPPER, Blk, Malabar, per lb. | 0 4⅛ | .. | 0 5¼ | 0 4⅛ | .. | 0 5 |
| Singapore ........ ,, | 0 3⅜ | .. | 0 3½ | 0 3⅝ | .. | 0 3¾ |
| White Tellicherry ,, | 0 0 | .. | 0 0 | 0 10 | .. | 1 4 |
| Cayenne .......... ,, | 1 4 | .. | 3 1 | 1 6 | .. | 2 6 |
| MACE, 1st quality .. ,, | 1 10 | .. | 2 8 | 2 0 | .. | 3 0 |
| 2nd and inferior .. ,, | 1 0 | .. | 1 9 | 0 11 | .. | 1 11 |
| NUTMEGS, 78 to 60 to lb. ,, | 4 0 | .. | 4 9 | 3 9 | .. | 4 6 |
| 90 to 80 ,, ,, | 3 0 | .. | 3 11 | 3 0 | .. | 3 8 |
| 132 to 95 ,, ,, | 1 10 | .. | 2 11 | 2 0 | .. | 2 11 |
| PIMENTA .................. | 0 4⅞ | .. | 0 5 | 0 4 | .. | 0 4½ |

## VARIOUS PRODUCTS.

| | 1878. | | | 1877. | | |
|---|---|---|---|---|---|---|
| COCHINEAL— | | | | | | |
| Honduras, black ..per lb. | 2 3 | .. | 2 6 | 2 0 | .. | 2 7 |
| ,, silver .. ,, | 2 3 | .. | 2 5 | 1 11 | .. | 2 4 |
| ,, pasty .. ,, | 2 2 | .. | 0 0 | 1 10 | .. | 0 0 |
| Mexican, black.... ,, | 2 2 | .. | 2 3 | 1 10 | .. | 1 11 |
| ,, silver.... ,, | 2 0 | .. | 2 1 | 1 9 | .. | 1 10 |
| Teneriffe, black .. ,, | 2 2 | .. | 3 0 | 1 11 | .. | 3 0 |
| ,, silver .. ,, | 2 2 | .. | 2 4 | 2 0 | .. | 2 3 |
| SOAP, Castile......per cwt. | 26 0 | .. | 33 0 | 33 0 | .. | 34 10 |
| SOY, China ...... ,, gall. | 2 6 | .. | 2 7 | 1 8 | .. | 0 0 |
| SPONGE, Turk.fin.pkd pr lb. | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Fair to good ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Ordinary .. ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Bahama.... ,, | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| TERRA JAPONICA— | | | | | | |
| Gambier ......per cwt. | 18 3 | .. | 0 0 | 20 6 | .. | 0 0 |
| Free cubes .... ,, | 25 0 | .. | 27 6 | 27 6 | .. | 30 6 |
| Cutch .......... ,, | 23 0 | .. | 26 0 | 24 0 | .. | 24 9 |
| WOOD, DYE, Bar ..per ton | £2 15 | .. | £3 0 | £3 0 | .. | 3 5 |
| Brazil ............ ,, | 0 0 | .. | 0 0 | 14 0 | .. | 20 0 |
| Cam.............. ,, | 18 0 | .. | 30 0 | 18 0 | .. | 32 0 |
| Fustic, Cuba ...... ,, | 0 0 | .. | 0 0 | 8 0 | .. | 8 10 |
| Jamaica ........ ,, | 0 0 | .. | 6 10 | 5 15 | .. | 6 0 |
| LOGWOOD, Campeachy ,, | 8 5 | .. | 8 10 | 8 15 | .. | 9 0 |
| Honduras ...... ,, | 6 15 | .. | 6 17/6 | 6 10 | .. | 6 15 |
| St. Domingo .... ,, | 5 5 | .. | 6 0 | 5 0 | .. | 5 15 |
| Jamaica ........ ,, | 5 0 | .. | 5 15 | 4 15 | .. | 5 10 |
| LIMA, first pile .... ,, | 9 0 | .. | 10 10 | 9 0 | .. | 10 0 |
| RED SANDERS .... ,, | 6 0 | .. | 6 12/6 | 6 10 | .. | 0 0 |

# NOTES AND QUERIES

*** *Blood Mixture.*—In this column last month we stated in reply to a orrespondent that we believed he might entitle a preparation of his own Blood Mixture," if he took care not to imitate any existing style, nor in ny way mislead customers. We have since ascertained, however, that Ir. F. J. Clarke, of Lincoln, has succeeded in registering the title "Blood lixture." The law, therefore, recognises that particular combination of 'ords as Mr. Clarke's own property, and no one else is at liberty to approriate the same.

## SACHET POWDERS.

Mr. C. R. Avery, of Brooklyn, U.S., has kindly favoured us with the subpined formulæ for sachet powders, which, he says, are in use in America to considerable extent.

### YLANG-YLANG SACHET.

| | |
|---|---|
| Powdered orris root | 1 pound |
| Powdered benzoin | ½ ounce |
| Civet | 5 grains |
| Otto Ylang-ylang | 20 drops |
| Otto bitter almonds | 3 drops |

Mix.

### SACHET—BOUQUET DE CAROLINE.

| | |
|---|---|
| Powdered orris root | 2 pounds |
| Musk | 10 grains |
| Otto of rose | ½ drachm |
| Otto of bergamot | ½ ounce |
| Otto of lemon | ½ ounce |

Mix.

### FRANGIPANI SACHET.

| | |
|---|---|
| Powdered orris root | 1 pound |
| Powdered tonka beans | ¼ pound |
| Musk | 10 grains |
| Civet | 30 grains |
| Otto of rose | 10 drops |
| Otto of santal | 10 drops |
| Otto of neroli | 10 drops |

Mix.

### HELIOTROPE SACHET.

| | |
|---|---|
| Powdered orris root | 1 pound |
| Powdered vanilla beans | ¼ pound |
| Powdered benzoin | 1 ounce |
| Musk | 5 grains |
| Civet | 15 grains |
| Otto of rose | 10 drops |
| Otto of bitter almonds | 10 drops |

Mix.

### JOCKEY CLUB SACHET.

| | |
|---|---|
| Powdered orris | 1 pound |
| Musk | 5 grains |
| Otto of rose | 40 drops |
| Otto of bergamot | 60 drops |
| Otto of santal | 60 drops |

Mix.

### LAVENDER SACHET.

| | |
|---|---|
| Lavender flowers free from stalk | 1 pound |
| Dried thyme | 1 ounce |
| Dried mint | 1 ounce |
| Ground cloves | ½ ounce |
| Ground caraway | ½ ounce |

Mix.

### MILLEFLEUR SACHET.

| | |
|---|---|
| Powdered orris root | 1 pound |
| Musk | 5 grains |
| Civet | 10 grains |
| Otto of rose | 20 drops |
| Otto of cloves | 30 drops |
| Otto of bergamot | 60 drops |
| Otto of neroli | 20 drops |

Mix.

### MUSK SACHET.

| | |
|---|---|
| Powdered orris root | 2½ pounds |
| Musk (in grain) | ½ drachm |
| Otto of rose | 60 drops |

Mix.

### NEW-MOWN HAY SACHET.

| | |
|---|---|
| Bouquet de Caroline sachet | ½ pound |
| Verbena ,, | ¼ ,, |
| Violette ,, | ¼ ,, |

Mix.

### PATCHOULY SACHET.

| | |
|---|---|
| Powdered orris root | 1 pound |
| Patchouly leaves, ground | ½ pound |
| Otto of rose | 30 drops |
| Otto of patchouly | 60 drops |

Mix.

### RED ROSE SACHET.

| | |
|---|---|
| Orris root, powdered | 1 pound |
| Santal wood, ,, | ½ pound |
| Cedar wood ,, | ½ pound |
| Musk | 5 grains |
| Otto of rose | 1 drachm |
| Carmine to colour if desired. | |

Mix.

### ROSE GERANIUM SACHET.

| | |
|---|---|
| Powdered orris root | 2 pounds |
| Chiris' otto of rose geranium | ½ ounce |
| Extract of musk | ½ drachm |
| Otto of rose | 10 drops |

Mix.

### VIOLETTE SACHET.

| | |
|---|---|
| Powdered orris root | 2 pounds |
| Powdered gum benzoin | ¼ pound |
| Otto of bitter almonds | 10 drops |
| Otto of rose | 10 drops |
| Essence of cassie | 1 ounce |

Mix.

### VERBENA SACHET.

| | |
|---|---|
| Powdered orris root | 2 pounds |
| Civet | 10 grains |
| Otto of verbena | 40 drops |
| Otto of rose | 20 drops |

Mix.

### WEST-END SACHET.

| | |
|---|---|
| Powdered orris root | 1 pound |
| Musk | 10 grains |
| Civet | 20 grains |
| Otto of rose | 20 drops |
| Otto of bergamot | 40 drops |

Mix.

### WHITE ROSE SACHET.

| | |
|---|---|
| Powdered orris root (white) | 1 pound |
| Powdered starch | ½ pound |
| Otto of rose | 2 drachms |
| Otto of patchouly | 15 drops |

Mix.

*W. R.* asks:—1. "Can a registered chemist and druggist in business in the West of England authorise an unregistered relative to open and manage in his name a branch shop about 100 miles distant from him; the branch referred to is the relative's freehold property, is probably not transferred to the registered man whose name appears over the door; and what if the freehold should be legally turned over to him?" If the actual proprietor of the business be a registered chemist and druggist he may live where he pleases, and his manager may be both unregistered and incompetent. The case you suggest would be, no doubt, an infringement of the spirit of the law, but it would be difficult to prove that the name over the door was not actually the proprietor. The ownership of the freehold would be presumptive evidence against that conclusion, but it would require support. 2. "Can an unregistered person legally carry on the business of a chemist and druggist in all its branches—calling the place 'Medical Hall'—dispense physician's prescriptions, &c., so long as he does not assume the title of chemist, &c., or deal in or dispense the substances regarded as poisons by law?" There is nothing in the Pharmacy Act to prevent this, but it would be impossible for anyone to dispense half-a-dozen average prescriptions without dealing in some of the substances regarded as poisons by the Act.

*M. A.* asks if we know of a "small printing machine suitable for printing agents' names on handbills; one that would do, say, 500 per hour or more." We should be glad to hear from any chemists who have had practical experience with the small printing machines in the market; and perhaps some of them would kindly send us samples of the work accomplished. The information would be useful to a great many as well as to our immediate inquirer.

*W. N. G. L.* (Islington) sends us the following:—A NEW PRICE LIST, A.D. 1878.—A short dialogue between two old pill drivers.—"Good morning, Mr. Mastiche; how are you?" said Mr. Æther. —"Thank you," said Mr. Mastiche, "I feel the warm weather."—"So do I," said Mr. Æther. "But what think you of the *Pharmaceutical Journal*, September 7, pp. 199 and 200?"—Mr. Mastiche replied immediately, "Mr. Æther, my dear sir, don't take any notice of it. I always lie by; you are so easily let off, or, I may say, volatile." Mr. Æther perspired very copiously, and after finding his tongue replied—"Mr. Mastiche, if you can stick to this pray do so, that is—'Counter prescribing, easily remedied, eventually settled; must not give any advice; public to blame; fools in the end; put over the door, "Trade Chemist and Druggist;" must not offer sympathy; don't copy prescriptions—saves time.' What are we to do?"—"Well," said Mr. Mastiche, "I shall do the best I can; but I tell you what—I shall do next door to what I did before, that is, do the work well, and charge as I always did. But I think when Esculapius descends from the south-western arena to kindly frame a price list for those whom the public will not expect to find have lost their brains, they may find, not the chemist and druggist, but the artful Fox is on the look-out."—To this Mr. Æther replied by saying (all on the shake): "My dear sir, do you belong to the Square?"—Mr. Mastiche said, "I do. I get journals; you get none. I vote at general meetings; you cannot. I vote for members of Council; you must not."—Mr. Æther said, with a very grave face, "I see how it is; I suppose, instead of taking up your time, had I said it all means £ *s.* *d.*, you would have laughed."—Mr. Mastiche shook hands and heartily laughed with Mr. Æther, and said—"You are not far out, Mr. Æther; only do mind what you have read about the new price list."

*W. B. G.*—You are no doubt eligible for registration as a dentist. For procedure see our first editorial note. If you do not register you will be still at liberty to draw teeth for anyone who likes to submit himself to you; but after August 1, 1879, you could not legally recover charges for such operations, nor might you announce yourself as a dentist.

*Vet.*—The Pharmacy Act of 1868 leaves it at least doubtful whether veterinary surgeons may not carry on chemists' businesses; but the Act of 1869 was intended to interpret its predecessor, and it expressly provides that veterinary surgeons may dispense medicines for animals under their care. Last year a veterinary surgeon in Norfolk, who had sold vermin killer, was prosecuted, but paid the penalty before the case came into Court.

*J. Smith* is an assistant to a chemist and druggist, and employs his spare time in mechanical dentistry for his own profit, and also extracts teeth. Can he register? We see no reason why he should not.

*Alpha.*—The formula given last month (by S. L. Liverpool) for an inseparable lime juice and glycerine was evidently defective. The essence of lemon ℥ij. was a misprint for ʒij.; the proportion of citric acid was also omitted. We have lost the original note. Perhaps S. L. would kindly correct us, as several correspondents wish to try the formula.

*Colour for Varnish. Purchase of Methylated Spirit.*—W. T. Forbes writes:—"I shall be glad if any of your correspondents can tell me of a reliable brilliant red stain for spirit varnish. Aniline colours do not answer the purpose, they are too fugitive; neither does alkanet root." I notice in this month's CHEMIST & DRUGGIST some remarks of "W. F. W." about methylated spirit. As far as my experience goes, Bowerbank & Sons, of Sun Street, Bishopsgate, is the best house; their quality is good, and prices about the same as the drug houses, if advantage is taken of the discount. "W. F. W." being a licenced retailer may purchase methylated spirits of a drug house if he require only one gallon, but in larger quantities he must go to a dealer.

*H. Y.*—"Can any one tell me the correct rendering of Aq. Faricati?" We think it should be Fœniculi. If "H. Y." will write Faricati in various styles, he will see that this explanation is feasible.

*J. J. Macaulay.*—Finlay Dunn's "Veterinary Medicine," is sold at 12*s.* 6*d.*, we believe. Blaine's "Veterinary Medicine" is a smaller, but very useful, work.

*Inquirer.*—Quinine wine licenses. Unless you have a sweet wine license, you can only sell quinine wine made strictly according to the Pharmacopœia. Port and sherry are therefore excluded.

*Frankfort Black.—Indelible Ink.*—"T. W." says:—"I would feel much obliged for any information, through your journal, as to where I might get a substance called Frankfort black, which is, I understand, a kind of charcoal obtained from grape and vine lees, peach kernels, and bone shavings. It is one of the ingredients of an ink, said to be chemically indelible, the recipe of which I have. In case it cannot be obtained, I would be much obliged for a recipe for an indelible ink—black, dark blue, or dark green—which would require no heating, and if possible be in one preparation. I have made an aniline ink in two preparations, which is excellent in every respect but one—mango (?) turns it brown, as it does also Blackwood's jetoline." Frankfort black can probably be obtained of the colour merchant. An indelible ink has never yet been discovered. Carbon inks resist the action of chemicals, time, and exposure to the air, but they can generally be removed by washing with water. Still they are the nearest approximation to indelibility that we have at our command.

*Enquirer* (No. 2) says:—"I was interested in some remarks made in THE CHEMIST AND DRUGGIST some time back upon the solubility of shellac in an aqueous solution of borax, and the use to which it is put as a glossy dressing for leather bags, &c. I have tried several experiments, but find I cannot succeed in getting a preparation which gives a gloss: they all dry dead, or else whiten the leather, probably because they contain too much borax. Could you give me a formula which would yield a good result? There is a leather-dressing manufactured in this city (Bristol), and which has an extensive sale, which I know to be made from shellac and borax. It gives a nice smooth, glossy, even appearance to ladies' kid boots, to satchels, and bags."—[Our correspondent does not tell us on what page to find the paragraph he refers to. Nor does he tell us of what strength he has made his various solutions, or if he has added any colouring matter to them. Is not the gloss affected by the method of drying?]

*W. F.* has used the term dentist as well as chemist for years over his shop, and some one has told him that he has no right to the title now that the Act has passed. In the first place, the Act does not come into operation until next August, so in any case the clever gentleman was premature; and secondly, it provides that any one who declares that he was *bona fide* engaged in the practice of dentistry in conjunction with pharmacy last July, or previously, is to be entitled to registration. We observe that some anonymous contributor to the *British Journal of Dental Science*, who perhaps represents a small section of the profession, is now seeking to mutilate the Act for his own benefit, by insisting that the words of the Act mean only such persons as have performed the various operations of dentistry. The editor of that journal, however, very properly repudiates any sympathy with such a ridiculous interpretation of the expression.

*T. G. Pendleton* says:—"I have seen in the hands of some of our Lancashire working-men botanists a handbook of botany small enough to carry in the pocket for field use. It is a useful little book by Galpin, arranged on the Linnean system, but I think it is now out of print. Can you tell me of a book which will answer the same purpose. I should like the arrangement to be on a more modern system. Such a one was issued a few years ago at 4*s.* 6*d.* It is Hayward's "Botanical Handobok." It is not a work intended for beginners, but for those who have some general acquaintance with the English flora. The specific characters are necessarily very brief. It is arranged on the natural system, and prefixed are analytical tables of the orders and genera. We know, from practical experience, that is a pleasant field companion.

*Alpha*, York.—Iron in Whisky.—"Can you tell me how to remove the taste and colour of iron from whisky. A piece of iron was, unfortunately, dropped into a large bulk belonging to a friend, and it is all spoiled." We are surprised that the whisky attacked the iron. When of good quality, it is not at all likely to do so. The most certain effectual way of getting rid of the impurity is redistillation. This would remove every trace of it, and, at the same time, improve the spirit. If distillation is not feasible, filtration through silicated carbon will, perhaps, take its place. The makers of the silicated carbon filters claim that this material will remove iron and lead from water, and we do not see why it should not answer as well for whisky. The experiment should first be tried on a small quantity.

*Golden Hair-dye in Turkey.*—"In Sultan Abdul-Medjid's time blue-eyed delicate beauties with golden hair were the most admired by the Sultan; fair beauties consequently became extremely *recherché*, and the grand ladies of the capital vied with each other in their assiduity in finding out and educating them in order to present them to the seraglio. By degrees the taste for *laypisca*, or golden locks, became so general in Turkish society as to make the fortune of many a Pera *perruquier*, who sold for a guinea the tiny bottle of fluid that changed the dusky hair into golden tresses, whilst the ladies paid the penalty of its abuse in the injury done to their eyes, and the nervous maladies contracted by its use. Besides this, all the seraglio ladies indulge to a great extent in paint, rouge, and *rastuk* (antimony), for the eyes and eyebrows."—*The People of Turkey*, vol. i. p. 258.

CURRY.—The great dish of the East is curry, but let not the reader imagine that it is composed of a dry yellowish powder, for nothing is further from the truth. The fact is that the native curry more resembles the preparation for a salad, inasmuch as it is composed of vegetables in their green or ripe state; and it is surprising how many things are introduced into the savoury dish. One of the principal ingredients is the contents of the cocoanut crushed with its milk into a pulp. Turmeric is grown and largely used. The pods of the moringa tree enter into the curry, while its scraped root is used by the Europeans as a substitute for horse-radish, which it strongly resembles in flavour. The fresh chillies and capsicums of the country are considered indispensable, while the heart of the cocoanut tree, called cocoanut-cabbage, is another ingredient, though often used as a salad, in which form it has a delicious nutty taste.—Major Fred McNair, in "Perak and the Malays," p. 66.